PROGRESS REPORT FOR 1982: *PINUS BANKSIANA*-DOMINATED PERMANENT PLOTS IN THE ATHABASCA OIL SANDS[a]

Report OF-66

RESEARCH MANAGEMENT DIVISION
UNEDITED
MATERIAL
O.F. 000

PROGRESS REPORT FOR 1982:

PINUS BANKSIANA-DOMINATED PERMANENT PLOTS IN THE ATHABASCA OIL SANDS [a]

by

MIKE OSTAFICHUK
GEORGE H. LAROI

Department of Botany
University of Alberta

for

RESEARCH MANAGEMENT DIVISION
Alberta Environment

June 1983

[a] Contribution No. 6 of the SEADYN Project

LIST OF TABLES

		Page
1.	Locations of Four New Permanent Plots 1982	5
2.	Combined Atmospheric Emission Impingement-Stand Age Classification of the 20 *Pinus banksiana*-dominated Permanent Plots in the Athabasca Oil Sands Area	7
3.	Ages and Origin dates of Reference Stands Added to the *Pinus banksiana*-dominated Permanent Plots in the Athabasca Oil Sands Area	8
4.	Quantitative Plant Community Data for the Four New Reference Stands Located in *Pinus banksiana*-dominated Permanent Plots of the Athabasca Oil Sands Area	9
5.	Synthesis Table Showing the Estimated % Cover of Major Plant Growth-Forms; the % Constancy of Occurrence of Species, and the Cover-Class of Species in the Four New Reference Stands Established in 1982 in the *Pinus banksiana*-dominated Permanent Plots of the Athabasca Oil Sands Area	31
6.	Vascular Plant Species Richness, Dominance Index, Diversity Index and Total Cover in 20 *Pinus banksiana*-dominated Reference Stands of the Athabasca Oil Sands Region of Northeastern Alberta in 1981 and 1982	40
7.	Comparison of 1981 and 1982 Plant Cover Data for Reference Stand Nos. 8,5,14, and 3 in *Pinus banksiana*-dominated Permanent Plots of the Athabasca Oil Sands Area	44

RESEARCH MANAGEMENT DIVISION
UNEDITED
MATERIAL
O.F. 6060

LIST OF FIGURES

Page

1. Approximate Locations of 20 *Pinus banksiana*-dominated Permanent Plots in the Athabasca Oil Sands Area 6

2. Changes in Vegetation Cover % Between August 1981 and August 1982 in 12 *Pinus banksiana*-dominated Reference Stands in the Athabasca Oil Sands Area 37

ABSTRACT

Of the 16 permanent plots established in 1981, four of these, Nos. 1,6,11, and 13 were destroyed by fire shortly after they were surveyed. In 1982, four new plots were established to replace the burned ones. They were selected to represent the same impingement zones as the burned plots. Other criteria used in selecting the new stands were the same as used in the original establishment of the permanent plot array in 1981.

The new stands are statistically and subjectively within the range of variation found in *Pinus banksiana*-dominated forest and woodland growing on light textured soils in the Athabasca Oil Sands area.

Comparisons of 1981 and 1982 data reveal no obvious trends in relation to the impingement zones. Differences between the two years could in the main be attributed to the more favorable growing conditions in 1982. Stand No. 16 shows an anomalous bryophyte cover change which may be related to successional change and may point to an area of considerable significance in the interpretation of large or sudden changes in the flora of a community.

ACKNOWLEDGEMENTS

We wish to thank Mr. Robert Ellis, Mr. Manfred Bichlmaier, Mr. Larry Flanagan and Mrs. Nanci La Roi for their capable assistance and pleasant company in the field.

Again, it is a pleasure to acknowledge the assistance provided by the Research Management Division, particularly Dr. Percy Sims for scientific supervision and Mr. Barry Munson for administrative supervision.

Mr. Bill Lee is responsible for the computer output which made it much easier to handle the data.

Mrs. Evelyn Jamha's care and attention to detail in typing the manuscript are appreciated.

TABLE OF CONTENTS

		Page
LIST OF TABLES		i
LIST OF FIGURES		ii
ABSTRACT		iii
ACKNOWLEDGEMENTS		iv
1.	INTRODUCTION	1
2.	STUDY AREA	2
3.	METHODS	3
4.	RESULTS	4
4.1	Locations of Permanent Plots Added in 1982	4
4.1.1	Geographic Position	4
4.1.2	Impingement Zones and Age-Classes	4
4.2	Ages and Origins of New Peference Stands	4
4.3	Photographs of Vegetation in New Permanent Plots	9
4.4	Descriptions of the Plant Community Components of the Four New Reference Stands	9
4.4.1	Quantitative Data for Four New Reference Stands	9
4.4.2	Synthesis Table for Stands Established in 1982	30
4.4.3	Species Structure and Dominance Hierarchy of Reference Stands	30
4.4.3.1	Vascular Plant Community	30
4.4.3.2	Bryophyte and Lichen Community	30
4.5	Some Comparisons of 1981 and 1982 Survey Data	36
4.5.1	Total Plant Cover in 12 Reference Stands	36
4.5.2	Comparisons of Selected Community Statistics	38
4.5.3	Comparison of 1981 and 1982 Cover Data for Four Selected Reference Stands	43
4.5.4	Computer Storage of Data	53
5.	DISCUSSION	54
5.1	New Reference Stands	54
5.2	Comparison of 1981 and 1982 Data	54
6.	REFERENCES CITED	55
7.	APPENDIX	56
7.1	1982 Quantitative Data for Reference Stands: Computer Print-Out	56
7.2	Annotated List of Color Slides for Stands Established in 1982	186
7.3	Color Slides	189

1. INTRODUCTION

The objectives in this study were: (1) to resurvey the vegetation in the plots established and initially surveyed in August 1981; and (2) to establish four new permanent plots to replace and match as closely as possible the four permanent plots burned in August 1981.

The rationale remains as stated in the First Report, La Roi and Ostafichuk 1982. The first part of this report, which deals with the four new plots, follows closely the format used in the First Report to provide a common descriptive base for all reference stands. Dominance hierarchy data do not appear in the text of this report but are included as part of the computer print-out in the Appendix.

In the second part some comparisons are made between 1981 and 1982 data. These are intended as a sample of some ways in which the data coming from the reference stand surveys might be approached.

The third part, Discussion and References Cited (sections 5 and 6), needs no comment here.

The final part, the Appendix, is a computer print-out using the data storage and retrieval system which has been created for use with both the Oil Sands Monitoring Project and the SEADYN Project at Hondo. The print-out includes data as recorded in the field for individual 5 x 5 m plots in all the reference stands as well as statistics pertaining to reference stands, groupings of species, etc., and synthesis of species structure and dominance hierarchy.

2. STUDY AREA

The study area is unchanged. The map of the area (Figure 1) has been revised to show the permanent plots burned in 1981 and their replacements added in 1982.

3. METHODS

The methods used in selecting and establishing the four new permanent plots and establishing reference stands within these were the same as those used in 1981.

The vegetation survey methods, which are the same for the initial and subsequent surveys, are also those used in 1981.

4. RESULTS

4.1 LOCATIONS OF PERMANENT PLOTS ADDED IN 1982

4.1.1 Geographic Position

Table 1 gives the geographic coordinates, legal subdivisions, and airphoto coordinates of the four permanent plots added to the system in 1982. Figure 1 shows the approximate positions of all permanent plots in the study area.

Plots 01N - 04N are the new plots established in 1982. Those plot numbers with the suffix B are the 1981 plots which burned.

The geographic groups recognized in the First Report remain essentially unchanged except that four of the plots in the northeast group burned and were replaced.

4.1.2 Impingement Zones and Age-Classes

Table 2 is a combined atmospheric emission impingement-stand age classification which shows the relationships of each plot to the two parameters. Table 2 differs from the one given in the First Report in that a very young age class has been added to accommodate the four burned plots.

4.2 AGES AND ORIGINS OF NEW REFERENCE STANDS

Reference stand 01N is noteworthy in that the dominant cohort is widely spaced creating a park-like physiognomy. There is, however, an abundant second wave of colonizers which will result in full closure of the canopy in less than 30 years. Number 02N is overstocked resulting in the 'dog-hair' type of forest.

Table 3 summarizes age and origin characteristics of the four new stands.

Table 1. Locations of four new Permanent Plots 1982.

Permanent Plot Number	Geographic Coordinates		Legal Subdivision	Airphoto Coordinates			
	Latitude (N)	Longitude (W)	Sect-Twnp-Range (W of 4th Mer)	Line #	Number	X (mm)	Y (mm)
New-1N	57°39'35"	111°10'	SE & SW 12-100-8	23	A23869-31	150	109
New-2N	57°39'25"	111°10'20"	NW1, SW12-100-8	23	A23869-31	145	108
New-3N	57°33'10"	111°20'20"	NE35-98-9	21	A23888-136	42	172
New-4N	57°33'	111°21'25"	NW35-98-9	21	A23888-136	24	163

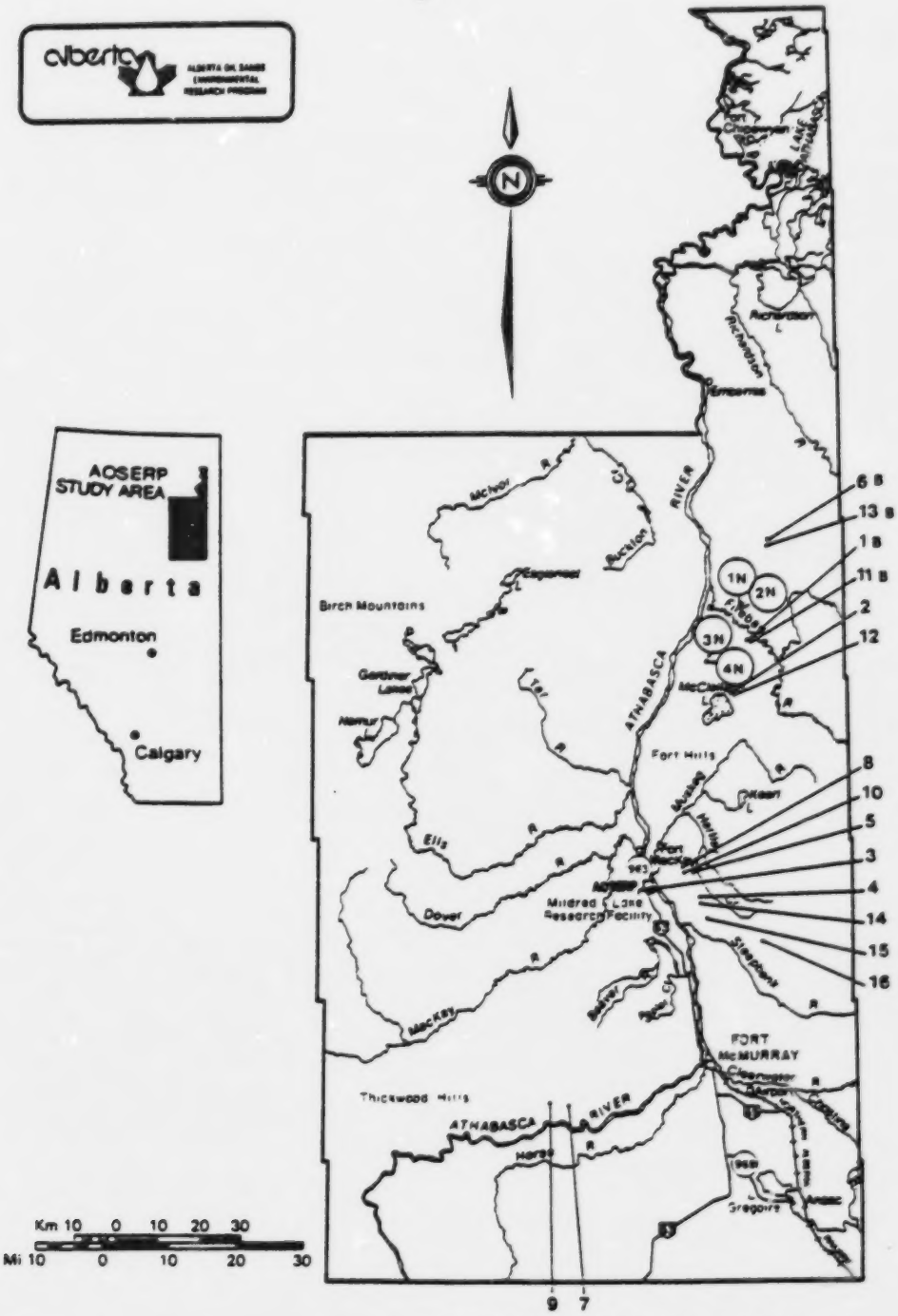


Figure 1. Approximate Locations of 20 *Pinus banksiana*-dominated Permanent Plots in the Athabasca Oil Sand Area. B = burned in 1981; N = established in 1982.

Table 2. Combined atmospheric emission impingement-stand age classification of the 20 *Pinus banksiana*-dominated permanent plots in the Athabasca Oil Sands area. Stands classified as they existed at the end of August, 1982. The impingement zones are based on Thomson (1981).

Impingement Zone (ppb)	Stand Age-Class: Very Young (1 to 10 yrs)	Young (11 to 50 yrs)	Middle (51 to 110 yrs)	Total Plots
0. Control (*ca* 0)	6B[b], 13B	.	.	2
1. Very Low (0 to 2.5)	1B, 11B	1N[a], 7	2N,9	6
2. Low (2.6 to 5.0)	.	3N,2, 3, 8	4N,10, 12	7
3. Medium (5.1 to 7.5)	.	5, 16[c]	.	2
4. High (7.6 to 10.0)	.	4, 14	.	2
5. Very High (> 10.0)	.	15[c]	.	1
Total Plots	4	11	5	20

[a] Permanent plots established in August, 1982.

[b] Permanent plots burned shortly after establishment in August, 1981. Nos. 6 and 13 were not visited in 1982.

[c] Nos. 15 and 16 are located on clay-rich, stoney till parent material. The other 18 permanent plots are on sands.

Table 3. Ages and origin dates of reference stands added to the *Pinus banksiana*-dominated permanent plots of the Athabasca Oil Sands area in northern Alberta. Tree ages are from ring counts of increment cores taken 35 cm above ground and from discs sawed 5 cm above ground in the case of very small trees. Stand origin dates are obtained from wedges sawn from fire-scarred trees, following Tande (1979).

Reference Stand Number	Ages of Trees (years)	Stand Origin Date
1N	35, 26, 33, 37[a]	.
2N	52, 53, 47, 55	.
3N	33, 31, 34	.
4N[b]	70, 73	1909

[a] Stand ages determined from oldest trees of dominant age-class (cohort), underlined.

[b] This stand experienced a ground fire about 35 years ago and its understory originated in 1947, not in 1909.

4.3 PHOTOGRAPHS OF VEGETATION IN NEW PERMANENT PLOTS

An annotated set of 20 color slides is included in the Appendix (section 7) of this report. Only slides of the four new stands are included and they have been selected to illustrate the same features pointed out in the First Report.

4.4. DESCRIPTIONS OF THE PLANT COMMUNITY COMPONENTS OF THE FOUR NEW REFERENCE STANDS

4.4.1 Quantitative Data for Four New Reference Stands

Table 4 gives the results of the August 1982 survey of the four new reference stands. The reference stands are given in order of increasing age. The data for the four new stands can be used to make the same statistical inferences as was suggested in the First Report (section 4.4.1).

Table 4. Quantitative plant community data for the four new reference stands located in *Pinus banksiana*-dominated permanent plots of the Athabasca Oil Sands area in northern Alberta as they existed at the time of their establishment, August 1982. Each reference stand is treated as a five-page data-set, with stands arranged in order of increasing age resulting in the sequence: 01N, 03N, 02N, 04N. For details of survey methods see section 3.4 First Report ; for details on statistical aspects see section 4.4.1 First Report .

[see next 20 pages]

[text resumes on page 30]

ATHABASCA OIL SANDS ECOLOGICAL MONITORING PROJECT

Reference Stand No. 01N — Permanent Plot No.

Survey Date 4 August 1982 — Stand Age 32 yrs

Vascular Plants	Species Richness = 36	Cover = 18.5%
Bryophytes	Species Richness = 5	Cover = 7.02%
Terrestrial Lichens	Species Richness = 22	Cover = 19.6%
Plant Community	Species Richness = 72	Cover = 45.2%

CODE	Species	Frequency % 5x5 m Plots	Plant Cover % Mean	S.D.	Rank
Trees					
PIBA	*Pinus banksiana*	100	5.8240	4.801	1
PIGL	*Picea glauca*	.	.	.	.
PIMA	*Picea mariana*	.	.	.	.
POTR	*Populus tremuloides*	.	.	.	.
POBA	*Populus balsamifera*	.	.	.	.
LALA	*Larix laricina*	.	.	.	.
	Total Tree Cover = 5.8240%				
Shrubs					
VAMY	*Vaccinium myrtilloides*	96	1.8760	2.139	4
VAVI	*Vaccinium vitis-idaea*	84	1.3924	2.262	5
ARUV	*Arctostaphylos uva-ursi*	100	5.0600	4.940	2
ROAC	*Rosa acicularis*	4	0.0040	0.020	32
PRPE	*Prunus pensylvanica*	12	0.2044	0.999	10
AMAL	*Amelanchier alnifolia*	8	0.0080	0.028	27
RUST	*Rubus strigosus*	4	0.0400	0.200	20
LODI	*Lonicera dioica*	.	.	.	.
VIED	*Viburnum edule*	.	.	.	.
HUTO	*Hudsonia tomentosa*	.	.	.	.
SABE	*Salix bebbiana*	.	.	.	.
ALCR	*Alnus crispa*	8	2.0800	9.991	3
LEGR	*Ledum groenlandicum*	.	.	.	.
RIGL	*Ribes glandulosum*	.	.	.	.
SHCA	*Shepherdia canadensis*	.	.	.	.
SAPS	*Salix pseudomonticola*	.	.	.	.
SYAL	*Symphoricarpos albus*	.	.	.	.
VACA	*Vaccinium caespitosum*	.	.	.	.
BEPU	*Betula pumila*	.	.	.	.
SAMY	*Salix myrtillifolia*	.	.	.	.
	Total Shrub Cover = 10.8888%				

continued ...

Reference Stand No. 01N Continued

CODE	Species	Frequency % 5x5 m Plots	Plant Cover % Mean	S.D.	Rank
Graminoids					
ORPU	*Cryzopsis pungens*	96	0.2132	0.204	9
ELIN	*Elymus innovatus*	.	.	.	.
CXUM	*Carex umbellata*	76	0.2404	0.300	7
CXFO	*Carex foenea*	96	0.0688	0.101	16
ORAS	*Oryzopsis asperifolia*	4	0.0004	0.002	35
AGSC	*Agrostis scabra*	4	0.0040	0.020	31
BRCI	*Bromus ciliatus*	.	.	.	.
SCPU	*Schizachne purpurascens*	.	.	.	.
JUBA	*Juncus balticus*	.	.	.	.
ELGL	*Elymus glaucus*	.	.	.	.
CACA	*Calamagrostis canadensis*	.	.	.	.
CAIN	*Calamagrostis inexpansa*	12	0.0244	0.101	24
CXSP	*Carex* sp.	.	.	.	.
FESA	*Festuca saximontana*	8	0.0044	0.020	30
	Total Graminoid Cover = 0.5556%				
Pteridophytes					
EQVA	*Equisetum variegatum*	.	.	.	.
LYTR	*Lycopodium tristachyum*	.	.	.	.
LYAN	*Lycopodium annotinum*	.	.	.	.
EQSY	*Equisetum sylvaticum*	.	.	.	.
EQSC	*Equisetum scirpoides*	.	.	.	.
EQPR	*Equisetum pratense*	.	.	.	.
LYCL	*Lycopodium clavatum*	.	.	.	.
EQAR	*Equisetum arvense*	.	.	.	.
SEDE	*Selaginella densa*	4	0.0004	0.002	36
	Total Pteridophyte Cover = 0.0004%				

continued ...

Reference Stand No. 01N Continued.

CODE	Species	Frequency % 5x5 m Plots	Plant Cover % Mean	S.D.	Rank
Forbs					
MACA	*Maianthemum canadense*	80	0.1464	0.276	12
ASLA	*Aster laevis*	84	0.1336	0.169	13
ANMU	*Anemone multifida*	68	0.0248	0.039	23
GABO	*Galium boreale*	64	0.0656	0.103	17
MELI	*Melampyrum lineare*	.	.	.	.
LIBO	*Linnaea borealis*	56	0.2240	0.310	8
CARO	*Campanula rotundifolia*	48	0.0048	0.005	28
SODE	*Solidago decumbens*	92	0.3204	0.291	6
VIAD	*Viola adunca*	24	0.0096	0.027	26
APAN	*Apocynum androsaemifolium*	88	0.0932	0.094	15
COPA	*Comandra pallida*	.	.	.	.
FRVI	*Fragaria virginiana*	72	0.1004	0.129	14
POTRI	*Potentilla tridentata*	52	0.1616	0.003	11
GELI	*Geocaulon lividum*	.	.	.	.
PYVI	*Pyrola virens*	8	0.0008	0.003	34
HICA	*Hieracium canadense*	.	.	.	.
PYSE	*Pyrola secunda*	.	.	.	.
EPAN	*Epilobium angustifolium*	16	0.0448	0.200	18
ARCA	*Artemisia campestris*	12	0.0048	0.020	29
ARNU	*Aralia nudicaulis*	.	.	.	.
COCA	*Cornus canadensis*	.	.	.	.
LIPH	*Lilium philadelphicum*	.	.	.	.
ANPA	*Anemone patens*	40	0.0292	0.045	22
TRBO	*Trientalis borealis*	.	.	.	.
VIRE	*Viola renifolia*	.	.	.	.
GORE	*Goodyera repens*	.	.	.	.
LAOC	*Lathyrus ochroleucus*	.	.	.	.
VIAM	*Vicia americana*	.	.	.	.
PEPA	*Petasites palmatus*	.	.	.	.
ASCI	*Aster ciliolatus*	4	0.0040	0.020	33
CYAC	*Cypripedium acaule*	.	.	.	.
ACMI	*Achillea millefolium*	68	0.0212	0.035	25
ANRA	*Antennaria racemosa*	20	0.0324	0.103	21
GEAM	*Gentianella amarella*	.	.	.	.
RUAC	*Rubus acaulis*	.	.	.	.
PYAS	*Pyrola asarifolia*	.	.	.	.
MINU	*Mitella nuda*	.	.	.	.
DRSP	*Draba* sp.	.	.	.	.
SESP	*Senecio* sp.	32	0.0408	0.104	19

Total Forb Cover = 1.2384%

continued ...

Reference Stand No. 01N Continued

CODE	Species	Frequency % 5x5 m Plots	Plant Cover % Mean	S.D.	Rank
Bryophytes					
AUL PAL	*Aulacomnium palustre*	.	.	.	.
BRA SAL	*Brachythecium salebrosum*	.	.	.	.
CER PUR	*Ceratodon purpureus*	.	.	.	.
DIC POL	*Dicranum polysetum*	7	0.0007	0.0026	30
DIC SCO	*Dicranum scoparium*	.	.	.	.
DIT FLE	*Ditrichum flexicaule*	.	.	.	.
DRE UNC	*Drepanocladus uncinatus*	.	.	.	.
HYL SPL	*Hylocomium splendens*	7	0.0007	0.0026	31
ORT FLA	*Orthodicranum flagellare*	.	.	.	.
PLE SCH	*Pleurozium schreberi*	7	0.0007	0.0026	32
POH NUT	*Pohlia nutans*	.	.	.	.
POL JUN	*Polytrichum juniperinum*	20	0.002	0.004	26
POL PIL	*Polytrichum piliferum*	100	7.02	10.22	2
PTI CIL	*Ptilidium ciliare*	.	.	.	.
PTI PUL	*Ptilidium pulcherrimum*	.	.	.	.
PTI C-C	*Ptilium crista-castrensis*	.	.	.	.
TET ANG	*Tetraplodon angustatus*	.	.	.	.
TOM NIT	*Tomenthypnum nitens*	.	.	.	.

Total Bryophyte Cover = 7.0241%

Terrestrial Lichens					
CET ERI	*Cetraria ericetorum*	67	0.0366	0.0465	13
CET CUC	*Cetraria cucullata*	.	.	.	.
CET NIV	*Cetraria nivalis*	.	.	.	.
CLA MIT	*Cladina mitis*	100	14.61	13.40	1
CLA RAN	*Cladina rangiferina*	.	.	.	.
CLA STE	*Cladina stellaris*	7	0.0007	0.0026	33
CLA AMA	*Cladonia amaurocraea*	13	0.0013	0.0035	28
CLA CAP	*Cladonia capitata*	.	.	.	.
CLA CEN	*Cladonia cenotea*	7	0.0007	0.0026	34
CLA CHL	*Cladonia chlorophaea*	47	0.0107	0.0252	18
CLA COC	*Cladonia coccifera*	93	0.370	0.597	7
CLA CON	*Cladonia coniocraea*	.	.	.	.
CLA COR	*Cladonia cornuta*	73	0.441	0.715	6
CLA CRP	*Cladonia crispata*	.	.	.	.
CLA CRT	*Cladonia cristatella*	80	0.696	1.382	5
CLA GON	*Cladonia gonecha*	20	0.002	0.004	23
CLA GRA	*Cladonia gracilis*	87	0.363	0.601	8

continued ...

Reference Stand No. 01N Concluded.

CODE	Species	Frequency % 5x5 m Plots	Plant Cover Mean	S.D.	Rank
CLA MUL	*Cladonia multiformis*	67	0.0366	0.0465	14
CLA PHY	*Cladonia phyllophora*	100	1.021	0.819	4
CLA PYX	*Cladonia pyxidata*	33	0.027	0.045	15
CLA SUB	*Cladonia subulata*	27	0.0027	0.0046	21
CLA UNC	*Cladonia uncialis*	20	0.068	0.258	11
CLA VER	*Cladonia verticillata*	20	0.002	0.004	24
PEL APH	*Peltigera aphthosa*	20	0.037	0.547	12
PEL MAL	*Peltigera malacea*	100	1.674	1.280	3
PEL RUF	*Peltigera rufescens*	20	0.002	0.004	25
STE ALP	*Stereocaulon alpinum*	13	0.0013	0.0035	29
LEC GRA	*Lecidea granulosa*	47	0.155	0.346	9

Total Terrestrial Lichen Cover = 19.5586%

Epiphytic Lichens

BRY SPP	*Bryoria species*	7	0.0007	0.0026	35
CET HAL	*Cetraria halei*	13	0.0013	0.0035	27
CET PIN	*Cetraria pinastri*	100	0.022	0.032	16
EVE MES	*Evernia mesomorpha*	7	0.0007	0.0026	36
HYP PHY	*Hypogymnia physodes*	33	0.087	0.256	10
PAR ELE	*Parmelia elegantula*	.	.	.	.
PAR SUL	*Parmelia sulcata*	20	0.008	0.026	20
PAR AMB	*Parmeliopsis ambigua*	53	0.011	0.025	17
PAR HYP	*Parmeliopsis hyperopta*	27	0.0027	0.0046	22
PLA GLA	*Platismatia glauca*	.	.	.	.
USN SPP	*Usnea species*	33	0.0093	0.025	19

Total Epiphytic Lichen Cover = 0.1427%

ATHABASCA OIL SANDS ECOLOGICAL MONITORING PROJECT

Reference Stand No. 03N — Permanent Plot No.

Survey Date 5 Aug 1982 — Stand Age 33 yrs

Vascular Plants	Species Richness = 30	Cover = 15.4%
Bryophytes	Species Richness = 2	Cover = 11.9%
Terrestrial Lichens	Species Richness = 20	Cover = 7.1%
Plant Community	Species Richness = 49	Cover = 34.5%

CODE	Species	Frequency % 5x5 m Plots	Plant Cover % Mean	S.D.	Rank
Trees					
PIBA	*Pinus banksiana*	96	11.0400	6.471	1
PIGL	*Picea glauca*	.	.	.	.
PIMA	*Picea mariana*	.	.	.	.
POTR	*Populus tremuloides*	4	0.0040	0.020	22
POBA	*Populus balsamifera*	.	.	.	.
LALA	*Larix laricina*				
	Total Tree Cover = 11.0440%				
Shrubs					
VAMY	*Vaccinium myrtilloides*	8	0.1000	0.408	6
VAVI	*Vaccinium vitis-idaea*	.	.	.	.
ARUV	*Arctostaphylos uva-ursi*	96	2.8440	2.960	2
ROAC	*Rosa acicularis*	.	.	.	.
PRPE	*Prunus pensylvanica*	4	0.0800	0.400	7
AMAL	*Amelanchier alnifolia*	4	0.0004	0.002	29
RUST	*Rubus strigosus*	12	0.0048	0.020	17
LODI	*Lonicera dioica*	.	.	.	.
VIED	*Viburnum edule*	.	.	.	.
HUTO	*Hudsonia tomentosa*	12	0.0048	0.020	18
SABE	*Salix bebbiana*	.	.	.	.
ALCR	*Alnus crispa*	.	.	.	.
LEGR	*Ledum groenlandicum*	.	.	.	.
RIGL	*Ribes glandulosum*	.	.	.	.
SHCA	*Shepherdia canadensis*	.	.	.	.
SAPS	*Salix pseudomonticola*	.	.	.	.
SYAL	*Symphoricarpos albus*	.	.	.	.
VACA	*Vaccinium caespitosum*	.	.	.	.
BEPU	*Betula pumila*	.	.	.	.
SAMY	*Salix myrtillifolia*	.	.	.	.
SASP	*Salix* sp.	4	0.6000	3.000	3
	Total Shrub Cover = 3.6380%				

continued ...

Reference Stand No. 03N Continued.

CODE	Species	Frequency % 5x5 m Plots	Plant Cover % Mean	S.D.	Rank
Forbs					
MACA	*Maianthemum canadense*	84	0.2216	0.297	4
ASLA	*Aster laevis*	32	0.0336	0.103	11
ANMU	*Anemone multifida*	4	0.0040	0.020	23
GABO	*Galium boreale*	.	.	.	.
MELI	*Melampyrum lineare*	.	.	.	.
LIBO	*Linnaea borealis*	4	0.0040	0.020	25
CARO	*Campanula rotundifolia*	76	0.0272	0.099	14
SODE	*Solidago decumbens*	96	0.1848	0.183	5
VIAD	*Viola adunca*	8	0.0044	0.020	20
APAN	*Apocynum androsaemifolium*	20	0.0288	0.102	13
COPA	*Comandra pallida*	.	.	.	.
FRVI	*Fragaria virginiana*	20	0.0324	0.103	12
POTRI	*Potentilla tridentata*	4	0.0004	0.002	27
GELI	*Geocaulon lividum*	.	.	.	.
PYVI	*Pyrola virens*	20	0.0092	0.028	15
HICA	*Hieracium canadense*	.	.	.	.
PYSE	*Pyrola secunda*	.	.	.	.
EPAN	*Epilobium angustifolium*	.	.	.	.
ARCA	*Artemisia campestris*	64	0.0388	0.047	10
ARNU	*Aralia nudicaulis*	.	.	.	.
COCA	*Cornus canadensis*	.	.	.	.
LIPH	*Lilium philadelphicum*	.	.	.	.
ANPA	*Anemone patens*	20	0.0092	0.028	16
TRBO	*Trientalis borealis*	.	.	.	.
VIRE	*Viola renifolia*	.	.	.	.
GORE	*Goodyera repens*	.	.	.	.
LAOC	*Lathyrus ochroleucus*	.	.	.	.
VIAM	*Vicia americana*	.	.	.	.
PEPA	*Petasites palmatus*	.	.	.	.
ASCI	*Aster ciliolatus*	.	.	.	.
CYAC	*Cypripedium acaule*	.	.	.	.
ACMI	*Achillea millefolium*	8	0.0008	0.003	26
ANRA	*Antennaria racemosa*	.	.	.	.
GEAM	*Gentianella amarella*	.	.	.	.
RUAC	*Rubus acaulis*	.	.	.	.
PYAS	*Pyrola asarifolia*	.	.	.	.
MINU	*Mitella nuda*	.	.	.	.
DRSP	*Draba* sp.	.	.	.	.
SESP	*Senecio* sp.	.	.	.	.
SECY	*Senecio cymbalarioides*	4	0.0004	0.002	28

Total Forb Cover = 0.5956%

continued ...

Reference Stand No. 03N Continued

CODE	Species	Frequency % 5x5 m Plots	Plant Cover % Mean	S.D.	Rank
Graminoids					
ORPU	*Oryzopsis pungens*	80	0.0512	0.048	8
ELIN	*Elymus innovatus*	.	.	.	.
CXUM	*Carex umbellata*	4	0.0004	0.002	30
CXFO	*Carex foenea*	100	0.0460	0.045	9
ORAS	*Oryzopsis asperifolia*	.	.	.	.
AGSC	*Agrostis scabra*	12	0.0048	0.020	19
BRCI	*Bromus ciliatus*	.	.	.	.
SCPU	*Schizachne purpurascens*	.	.	.	.
JUBA	*Juncus balticus*	.	.	.	.
ELGL	*Elymus glaucus*	.	.	.	.
CACA	*Calamagrostis canadensis*	.	.	.	.
CAIN	*Calamagrostis inexpansa*	4	0.0040	0.020	24
CXSP	*Carex* sp.	.	.	.	.
FESA	*Festuca saximontana*	8	0.0044	0.020	21

Total Graminoid Cover = 0.1108%

Pteridophytes

EQVA	*Equisetum variegatum*	.	.	.	.
LYTR	*Lycopodium tristachyum*	.	.	.	.
LYAN	*Lycopodium annotinum*	.	.	.	.
EQSY	*Equisetum sylvaticum*	.	.	.	.
EQSC	*Equisetum scirpoides*	.	.	.	.
EQPR	*Equisetum pratense*	.	.	.	.
LYCL	*Lycopodium clavatum*	.	.	.	.
EQAR	*Equisetum arvense*	.	.	.	.
SEDE	*Selaginella densa*	.	.	.	.

Total Pteridophyte Cover = 0.0

continued ...

Reference Stand No. 03N Continued

CODE	Species	Frequency % 5x5 m Plots	Plant Cover % Mean	S.D.	Rank
Bryophytes					
AUL PAL	*Aulacomnium palustre*	.	.	.	.
BRA SAL	*Brachythecium salebrosum*	.	.	.	.
CER PUR	*Ceratodon purpureus*	.	.	.	.
DIC POL	*Dicranum polysetum*	.	.	.	.
DIC SCO	*Dicranum scoparium*	.	.	.	.
DIT FLE	*Ditrichum flexicaule*	.	.	.	.
DRE UNC	*Drepanocladus uncinatus*	.	.	.	.
HYL SPL	*Hylocomium splendens*	.	.	.	.
ORT FLA	*Orthodicranum flagellare*	.	.	.	.
PLE SCH	*Pleurozium schreberi*	.	.	.	.
POH NUT	*Pohlia nutans*	.	.	.	.
POL JUN	*Polytrichum juniperinum*	13	0.0073	0.0258	20
POL PIL	*Polytrichum piliferum*	100	11.87	14.78	1
PTI CIL	*Ptilidium ciliare*	.	.	.	.
PTI PUL	*Ptilidium pulcherrimum*	.	.	.	.
PTI C-C	*Ptilium crista-castrensis*	.	.	.	.
TET ANG	*Tetraplodon angustatus*	.	.	.	.
TOM NIT	*Tomenthypnum nitens*	.	.	.	.
	Total Bryophyte Cover = 11.88%				
Terrestrial Lichens					
CET ERI	*Cetraria ericetorum*	87	0.183	0.335	7
CET CUC	*Cetraria cucullata*	.	.	.	.
CET NIV	*Cetraria nivalis*	7	0.0007	0.0026	28
CLA MIT	*Cladina mitis*	100	2.13	1.25	3
CLA RAN	*Cladina rangiferina*	.	.	.	.
CLA STE	*Cladina stellaris*	.	.	.	.
CLA AMA	*Cladonia amaurocraea*	.	.	.	.
CLA CAP	*Cladonia capitata*	7	0.0007	0.0026	29
CLA CEN	*Cladonia cenotea*	13	0.0013	0.0035	27
CLA CHL	*Cladonia chlorophaea*	33	0.003	0.005	23
CLA COC	*Cladonia coccifera*	100	0.088	0.032	8
CLA CON	*Cladonia coniocraea*	.	.	.	.
CLA COR	*Cladonia cornuta*	100	0.275	0.533	6
CLA CRP	*Cladonia crispata*	.	.	.	.
CLA CRT	*Cladonia cristatella*	80	0.026	0.039	13
CLA GON	*Cladonia gonecha*	20	0.002	0.004	25
CLA GRA	*Cladonia gracilis*	100	0.281	0.784	5

continued ...

Reference Stand No. 03N Concluded.

CODE	Species	Frequency % 5x5 m Plots	Plant Cover Mean	S.D.	Rank
CLA MUL	*Cladonia multiformis*	47	0.083	0.256	9
CLA PHY	*Cladonia phyllophora*	93	0.460	0.593	4
CLA PYX	*Cladonia pyxidata*	47	0.0047	0.0052	21
CLA SUB	*Cladonia subulata*	7	0.0007	0.0026	30
CLA UNC	*Cladonia uncialis*	47	0.023	0.040	14
CLA VER	*Cladonia verticillata*	27	0.0026	0.0046	24
PEL APH	*Peltigera aphthosa*	47	0.035	0.048	11
PEL MAL	*Peltigera malacea*	93	3.53	4.02	2
PEL RUF	*Peltigera rufescens*	.	.	.	.
STE ALP	*Stereocaulon alpinum*	.	.	.	.
LEC GRA	*Lecidea granulosa*	20	0.002	0.004	26

Total Terrestrial Lichen Cover = 7.132%

Epiphytic Lichens

BRY SPP	*Bryoria species*	93	0.0093	0.0026	17
CET HAL	*Cetraria halei*	87	0.0087	0.0035	18
CET PIN	*Cetraria pinastri*	100	0.028	0.037	12
EVE MES	*Evernia mesomorpha*	33	0.0038	0.0048	22
HYP PHY	*Hypogymnia physodes*	73	0.013	0.024	15
PAR ELE	*Parmelia elegantula*	.	.	.	.
PAR SUL	*Parmelia sulcata*	.	.	.	.
PAR AMB	*Parmeliopsis ambigua*	100	0.052	0.046	10
PAR HYP	*Parmeliopsis hyperopta*	87	0.0087	0.0035	19
PLA GLA	*Platismatia glauca*	.	.	.	.
USN SPP	*Usnea species*	100	0.010	0.0	16

Total Epiphytic Lichen Cover = 0.1335%

ATHABASCA OIL SANDS ECOLOGICAL MONITORING PROJECT

Reference Stand No. 02N — Permanent Plot No.

Survey Date 4 Aug 1982 — Stand Age 51 yrs

Vascular Plants	Species Richness = 19	Cover = 16.2%
Bryophytes	Species Richness = 7	Cover = 0.55%
Terrestrial Lichens	Species Richness = 18	Cover = 87.2%
Plant Community	Species Richness = 53	Cover = 103.8%

CODE	Species	Frequency %	Plant Cover %		
		5x5 m Plots	Mean	S.D.	Rank
Trees					
PIBA	*Pinus banksiana*	100	13.9200	3.978	1
PIGL	*Picea glauca*	.	.	.	.
PIMA	*Picea mariana*	.	.	.	.
POTR	*Populus tremuloides*	.	.	.	.
POBA	*Populus balsamifera*	.	.	.	.
LALA	*Larix laricina*	.	.	.	.
	Total Tree Cover = 13.9200%				
Shrubs					
VAMY	*Vaccinium myrtilloides*	60	0.8084	1.424	2
VAVI	*Vaccinium vitis-idaea*	56	0.5880	0.832	3
ARUV	*Arctostaphylos uva-ursi*	88	0.4560	0.485	4
ROAC	*Rosa acicularis*	.	.	.	.
PRPE	*Prunus pensylvanica*	.	.	.	.
AMAL	*Amelanchier alnifolia*	.	.	.	.
RUST	*Rubus strigosus*	.	.	.	.
LODI	*Lonicera dioica*	.	.	.	.
VIED	*Viburnum edule*	.	.	.	.
HUTO	*Hudsonia tomentosa*	.	.	.	.
SABE	*Salix bebbiana*	4	0.0040	0.020	15
ALCR	*Alnus crispa*	.	.	.	.
LEGR	*Ledum groenlandicum*	.	.	.	.
RIGL	*Ribes glandulosum*	.	.	.	.
SHCA	*Shepherdia canadensis*	.	.	.	.
SAPS	*Salix pseudomonticola*	.	.	.	.
SYAL	*Symphoricarpos albus*	.	.	.	.
VACA	*Vaccinium caespitosum*	.	.	.	.
BEPU	*Betula pumila*	.	.	.	.
SAMY	*Salix myrtillifolia*	.	.	.	.
	Total Shrub Cover = 1.9084%				

continued ...

Reference Stand No. 02N Continued.

CODE	Species	Frequency % 5x5 m Plots	Plant Cover % Mean	S.D.	Rank
Forbs					
MACA	*Maianthemum canadense*	64	0.2284	0.307	5
ASLA	*Aster laevis*	12	0.0244	0.101	9
ANMU	*Anemone multifida*	4	0.0004	0.002	18
GABO	*Galium boreale*	20	0.0056	0.020	14
MELI	*Melampyrum lineare*	.	.	.	.
LIBO	*Linnaea borealis*	20	0.0520	0.139	6
CARO	*Campanula rotundifolia*	8	0.0008	0.003	17
SODE	*Solidago decumbens*	20	0.0092	0.028	12
VIAD	*Viola adunca*	.	.	.	.
APAN	*Apocynum androsaemifolium*	4	0.0004	0.002	19
COPA	*Comandra pallida*	.	.	.	.
FRVI	*Fragaria virginiana*	.	.	.	.
POTRI	*Potentilla tridentata*	.	.	.	.
GELI	*Geocaulon lividum*	.	.	.	.
PYVI	*Pyrola virens*	32	0.0212	0.040	10
HICA	*Hieracium canadense*	.	.	.	.
PYSE	*Pyrola secunda*	.	.	.	.
EPAN	*Epilobium angustifolium*	.	.	.	.
ARCA	*Artemisia campestris*	.	.	.	.
ARNU	*Aralia nudicaulis*	.	.	.	.
COCA	*Cornus canadensis*	.	.	.	.
LIPH	*Lilium philadelphicum*	.	.	.	.
ANPA	*Anemone patens*	24	0.0168	0.037	11
TRBO	*Trientalis borealis*	.	.	.	.
VIRE	*Viola renifolia*	.	.	.	.
GORE	*Goodyera repens*	.	.	.	.
LAOC	*Lathyrus ochroleucus*	.	.	.	.
VIAM	*Vicia americana*	.	.	.	.
PEPA	*Petasites palmatus*	.	.	.	.
ASCI	*Aster ciliolatus*	.	.	.	.
CYAC	*Cypripedium acaule*	.	.	.	.
ACMI	*Achillea millefolium*	.	.	.	.
ANRA	*Antennaria racemosa*	.	.	.	.
GEAM	*Gentianella amarella*	.	.	.	.
RUAC	*Rubus acaulis*	.	.	.	.
PYAS	*Pyrola asarifolia*	.	.	.	.
MINU	*Mitella nuda*	.	.	.	.
DRSP	*Draba* sp.	.	.	.	.
SESP	*Senecio* sp.	8	0.0080	0.028	13
SECY	*Senecio cymbalariodes*	4	0.0040	0.020	16

Total Forb Cover = 0.3192%

continued ...

Reference Stand No. 02N Continued

CODE	Species	Frequency % 5x5 m Plots	Plant Cover % Mean	S.D.	Rank
Graminoids					
ORPU	*Oryzopsis pungens*	64	0.0280	0.042	7
ELIN	*Elymus innovatus*	.	.	.	.
CXUM	*Carex umbellata*	36	0.0252	0.043	8
CXFO	*Carex foenea*	.	.	.	.
ORAS	*Oryzopsis asperifolia*	.	.	.	.
AGSC	*Agrostis scabra*	.	.	.	.
BRCI	*Bromus ciliatus*	.	.	.	.
SCPU	*Schizachne purpurascens*	.	.	.	.
JUBA	*Juncus balticus*	.	.	.	.
ELGL	*Elymus glaucus*	.	.	.	.
CACA	*Calamagrostis canadensis*	.	.	.	.
CAIN	*Calamagrostis inexpansa*	.	.	.	.
CXSP	*Carex* sp.	.	.	.	.
	Total Graminoid Cover = 0.0532%				
Pteridophytes					
EQVA	*Equisetum variegatum*	.	.	.	.
LYTR	*Lycopodium tristachyum*	.	.	.	.
LYAN	*Lycopodium annotinum*	.	.	.	.
EQSY	*Equisetum sylvaticum*	.	.	.	.
EQSC	*Equisetum scirpoides*	.	.	.	.
EQPR	*Equisetum pratense*	.	.	.	.
LYCL	*Lycopodium clavatum*	.	.	.	.
EQAR	*Equisetum arvense*	.	.	.	.
SEDE	*Selaginella densa*	.	.	.	.
	Total Pteridophyte Cover = 0.0				

continued ...

Reference Stand No. 02N Continued

CODE	Species	Frequency % 5x5 m Plots	Plant Cover % Mean	S.D.	Rank
Bryophytes					
AUL PAL	*Aulacomnium palustre*	.	.	.	.
BRA SAL	*Brachythecium salebrosum*	.	.	.	.
CER PUR	*Ceratodon purpureus*	.	.	.	.
DIC POL	*Dicranum polysetum*	71	0.085	0.255	11
DIC SCO	*Dicranum scoparium*	.	.	.	.
DIT FLE	*Ditrichum flexicaule*	.	.	.	.
DRE UNC	*Drepanocladus uncinatus*	.	.	.	.
HYL SPL	*Hylocomium splendens*	27	0.015	0.035	20
ORT FLA	*Orthodicranum flagellare*	.	.	.	.
PLE SCH	*Pleurozium schreberi*	13	0.0013	0.0035	31
POH NUT	*Pohlia nutans*	.	.	.	.
POL JUN	*Polytrichum juniperinum*	93	0.435	0.479	5
POL PIL	*Polytrichum piliferum*	13	0.0073	0.0258	28
PTI CIL	*Ptilidium ciliare*	.	.	.	.
PTI PUL	*Ptilidium pulcherrimum*	20	0.002	0.004	30
PTI C-C	*Ptilium crista-castrensis*	7	0.0007	0.0026	32
TET ANG	*Tetraplodon angustatus*	.	.	.	.
TOM NIT	*Tomenthypnum nitens*	.	.	.	.
	Total Bryophyte Cover = 0.5463%				
Terrestrial Lichens					
CET ERI	*Cetraria ericetorum*	100	0.088	0.032	10
CET CUC	*Cetraria cucullata*	.	.	.	.
CET NIV	*Cetraria nivalis*	40	0.010	0.025	23
CLA MIT	*Cladina mitis*	100	77.00	7.27	1
CLA RAN	*Cladina rangiferina*	20	0.020	0.041	17
CLA STE	*Cladina stellaris*	100	0.907	0.875	4
CLA AMA	*Cladonia amaurocraea*	60	0.012	0.025	22
CLA CAP	*Cladonia capitata*	.	.	.	.
CLA CEN	*Cladonia cenotea*	7	0.0007	0.0026	33
CLA CHL	*Cladonia chlorophaea*	73	0.031	0.048	15
CLA COC	*Cladonia coccifera*	.	.	.	.
CLA CON	*Cladonia coniocraea*	.	.	.	.
CLA COR	*Cladonia cornuta*	100	0.40	0.44	6
CLA CRP	*Cladonia crispata*	.	.	.	.
CLA CRT	*Cladonia cristatella*	20	0.002	0.004	29
CLA GON	*Cladonia gonecha*	67	0.0426	0.0486	14
CLA GRA	*Cladonia gracilis*	93	0.388	0.587	7

continued ...

Reference Stand No. 02N Concluded.

CODE	Species	Frequency % 5x5 m Plots	Plant Cover Mean	S.D.	Rank
CLA MUL	*Cladonia multiformis*	53	0.029	0.044	16
CLA PHY	*Cladonia phyllophora*	80	0.062	0.048	12
CLA PYX	*Cladonia pyxidata*	.	.	.	.
CLA SUB	*Cladonia subulata*	.	.	.	.
CLA UNC	*Cladonia uncialis*	87	4.28	7.60	2
CLA VER	*Cladonia verticillata*	7	0.0007	0.0026	34
PEL APH	*Peltigera aphthosa*	13	0.013	0.035	21
PEL MAL	*Peltigera malacea*	93	1.89	1.86	3
PEL RUF	*Peltigera rufescens*	.	.	.	.
STE ALP	*Stereocaulon alpinum*	.	.	.	.

Total Terrestrial Lichen Cover = 85.176%

Epiphytic Lichens

BRY SPP	*Bryoria species*	100	0.016	0.023	18
CET HAL	*Cetraria halei*	100	0.208	0.323	8
CET PIN	*Cetraria pinastri*	100	0.010	0.0	24
EVE MES	*Evernia mesomorpha*	100	0.016	0.023	19
HYP PHY	*Hypogymnia physodes*	100	0.052	0.046	13
PAR ELE	*Parmelia elegantula*	.	.	.	.
PAR SUL	*Parmelia sulcata*	40	0.010	0.025	25
PAR AMB	*Parmeliopsis ambigua*	100	0.010	0.0	26
PAR HYP	*Parmeliopsis hyperopta*	100	0.010	0.0	27
PLA GLA	*Platismatia glauca*	.	.	.	.
USN SPP	*Usnea species*	100	0.10	0.245	9

Total Epiphytic Lichen Cover = 0.462%

ATHABASCA OIL SANDS ECOLOGICAL MONITORING PROJECT

Reference Stand No. 04N — Permanent Plot No.

Survey Date 5 Aug 1982 — Stand Age 72 yrs

Vascular Plants	Species Richness = 32	Cover = 14.5%
Bryophytes	Species Richness = 6	Cover = 0.89%
Terrestrial Lichens	Species Richness = 17	Cover = 23.5%
Plant Community	Species Richness = 64	Cover = 39.3%

CODE	Species	Frequency % 5x5 m Plots	Plant Cover % Mean	S.D.	Rank
Trees					
PIBA	*Pinus banksiana*	100	10.1240	9.189	1
PIGL	*Picea glauca*	4	0.0040	0.020	26
PIMA	*Picea mariana*	.	.	.	.
POTR	*Populus tremuloides*	.	.	.	.
POBA	*Populus balsamifera*	.	.	.	.
LALA	*Larix laricina*	.	.	.	.
	Total Tree Cover = 10.1280%				
Shrubs					
VAMY	*Vaccinium myrtilloides*	60	1.0720	1.696	3
VAVI	*Vaccinium vitis-idaea*	.	.	.	.
ARUV	*Arctostaphylos uva-ursi*	96	1.9600	1.258	2
ROAC	*Rosa acicularis*	8	0.0080	0.028	19
PRPE	*Prunus pensylvanica*	16	0.0088	0.028	16
AMAL	*Amelanchier alnifolia*	4	0.0040	0.020	24
RUST	*Rubus strigosus*	.	.	.	.
LODI	*Lonicera dioica*	.	.	.	.
VIED	*Viburnum edule*	.	.	.	.
HUTO	*Hudsonia tomentosa*	4	0.0004	0.002	30
SABE	*Salix bebbiana*	4	0.0200	0.100	14
ALCR	*Alnus crispa*	.	.	.	.
LEGR	*Ledum groenlandicum*	.	.	.	.
RIGL	*Ribes glandulosum*	.	.	.	.
SHCA	*Shepherdia canadensis*	.	.	.	.
SAPS	*Salix pseudomonticola*	.	.	.	.
SYAL	*Symphoricarpos albus*	.	.	.	.
VACA	*Vaccinium caespitosum*	.	.	.	.
BEPU	*Betula pumila*	.	.	.	.
SAMY	*Salix myrtillifolia*	.	.	.	.
	Total Shrub Cover = 3.0732%				

continued ...

Reference Stand No. 04N Continued.

CODE	Species	Frequency % 5x5 m Plots	Plant Cover % Mean	S.D.	Rank
Forbs					
MACA	*Maianthemum canadense*	100	0.4464	0.493	4
ASLA	*Aster laevis*	56	0.1044	0.213	8
ANMU	*Anemone multifida*	24	0.0096	0.027	15
GABO	*Galium boreale*	.	.	.	.
MELI	*Melampyrum lineare*	24	0.0328	0.103	11
LIBO	*Linnaea borealis*	.	.	.	.
CARO	*Campanula rotundifolia*	52	0.0052	0.005	21
SODE	*Solidago decumbens*	84	0.1140	0.152	7
VIAD	*Viola adunca*	8	0.0080	0.028	18
APAN	*Apocynum androsaemifolium*	64	0.2776	0.473	5
COPA	*Comandra pallida*	.	.	.	.
FRVI	*Fragaria virginiana*	44	0.0456	0.104	9
POTRI	*Potentilla tridentata*	16	0.0088	0.028	17
GELI	*Geocaulon lividum*	.	.	.	.
PYVI	*Pyrola virens*	52	0.0376	0.048	10
HICA	*Hieracium canadense*	20	0.0288	0.102	12
PYSE	*Pyrola secunda*	.	.	.	.
EPAN	*Epilobium angustifolium*	.	.	.	.
ARCA	*Artemisia campestris*	8	0.0044	0.020	22
ARNU	*Aralia nudicaulis*	.	.	.	.
COCA	*Cornus canadensis*	.	.	.	.
LIPH	*Lilium philadelphicum*	.	.	.	.
ANPA	*Anemone patens*	4	0.0040	0.020	25
TRBO	*Trientalis borealis*	4	0.0004	0.002	31
VIRE	*Viola renifolia*	.	.	.	.
GORE	*Goodyera repens*	4	0.0004	0.002	29
LAOC	*Lathyrus ochroleucus*	.	.	.	.
VIAM	*Vicia americana*	.	.	.	.
PEPA	*Petasites palmatus*	.	.	.	.
ASCI	*Aster ciliolatus*	.	.	.	.
CYAC	*Cypripedium acaule*	.	.	.	.
ACMI	*Achillea millefolium*	32	0.0068	0.020	20
ANRA	*Antennaria racemosa*	.	.	.	.
GEAM	*Gentianella amarella*	.	.	.	.
RUAC	*Rubus acaulis*	.	.	.	.
PYAS	*Pyrola asarifolia*	.	.	.	.
MINU	*Mitella nuda*	.	.	.	.
DRSP	*Draba* sp.	.	.	.	.
SESP	*Senecio* sp.	.	.	.	.
SECY	*Senecio cymbalarioides*	8	0.0044	0.020	23
STLO	*Stellaria longipes*	4	0.0004	0.002	28
ARLY	*Arabis lyalii*	12	0.0012	0.003	27

Total Forb Cover = 1.1408%

continued ...

Reference Stand No. 04N Continued

CODE	Species	Frequency % 5x5 m Plots	Plant Cover % Mean	S.D.	Rank
Bryophytes					
AUL PAL	*Aulacomnium palustre*	.	.	.	.
BRA SAL	*Brachythecium salebrosum*	.	.	.	.
CER PUR	*Ceratodon purpureus*	.	.	.	.
DIC POL	*Dicranum polysetum*	53	0.017	0.033	17
DIC SCO	*Dicranum scoparium*	.	.	.	.
DIT FLE	*Ditrichum flexicaule*	.	.	.	.
DRE UNC	*Drepanocladus uncinatus*	.	.	.	.
HYL SPL	*Hylocomium splendens*	7	0.0007	0.0026	29
ORT FLA	*Orthodicranum flagellare*	.	.	.	.
PLE SCH	*Pleurozium schreberi*	13	0.007	0.0026	20
POH NUT	*Pohlia nutans*	.	.	.	.
POL JUN	*Polytrichum juniperinum*	53	0.348	0.610	8
POL PIL	*Polytrichum piliferum*	87	0.507	0.609	7
PTI CIL	*Ptilidium ciliare*	.	.	.	.
PTI PUL	*Ptilidium pulcherrimum*	13	0.007	0.026	21
PTI C-C	*Ptilium crista-castrensis*	.	.	.	.
TET ANG	*Tetraplodon angustatus*	.	.	.	.
TOM NIT	*Tomenthypnum nitens*	.	.	.	.

Total Bryophyte Cover = 0.8867%

Terrestrial Lichens					
CET ERI	*Cetraria ericetorum*	53	0.035	0.047	12
CET CUC	*Cetraria cucullata*	.	.	.	.
CET NIV	*Cetraria nivalis*	.	.	.	.
CLA MIT	*Cladina mitis*	100	15.41	23.89	1
CLA RAN	*Cladina rangiferina*	.	.	.	.
CLA STE	*Cladina stellaris*	7	0.0007	0.0026	30
CLA AMA	*Cladonia amaurocraea*	.	.	.	.
CLA CAP	*Cladonia capitata*	.	.	.	.
CLA CEN	*Cladonia cenotea*	7	0.0007	0.0026	31
CLA CHL	*Cladonia chlorophaea*	73	0.085	0.255	11
CLA COC	*Cladonia coccifera*	93	0.033	0.042	13
CLA CON	*Cladonia coniocraea*	.	.	.	.
CLA COR	*Cladonia cornuta*	80	0.822	1.065	6
CLA CRP	*Cladonia crispata*	20	0.002	0.004	26
CLA CRT	*Cladonia cristatella*	33	0.003	0.005	25
CLA GON	*Cladonia gonecha*	47	0.0047	0.0051	24
CLA GRA	*Cladonia gracilis*	93	1.56	2.15	4

continued ...

Reference Stand No. 04N Continued

CODE	Species	Frequency % 5x5 m Plots	Plant Cover % Mean	S.D.	Rank
Graminoids					
ORPU	*Oryzopsis pungens*	88	0.1488	0.289	6
ELIN	*Elymus innovatus*	.	.	.	.
CXUM	*Carex umbellata*	.	.	.	.
CXFO	*Carex foenea*	16	0.0212	0.100	13
ORAS	*Oryzopsis asperifolia*	.	.	.	.
AGSC	*Agrostis scabra*	.	.	.	.
BRCI	*Bromus ciliatus*	.	.	.	.
SCPU	*Schizachne purpurascens*	.	.	.	.
JUBA	*Juncus balticus*	.	.	.	.
ELGL	*Elymus glaucus*	.	.	.	.
CACA	*Calamagrostis canadensis*	.	.	.	.
CAIN	*Calamagrostis inexpansa*	.	.	.	.
CXSP	*Carex* sp.	.	.	.	.
FESA	*Festuca saximontana*	4	0.0004	0.002	32

Total Graminoid Cover = 0.1704%

Pteridophytes					
EQVA	*Equisetum variegatum*	.	.	.	.
LYTR	*Lycopodium tristachyum*	.	.	.	.
LYAN	*Lycopodium annotinum*	.	.	.	.
EQSY	*Equisetum sylvaticum*	.	.	.	.
EQSC	*Equisetum scirpoides*	.	.	.	.
EQPR	*Equisetum pratense*	.	.	.	.
LYCL	*Lycopodium clavatum*	.	.	.	.
EQAR	*Equisetum arvense*	.	.	.	.
SEDE	*Selaginella densa*	.	.	.	.

Total Pteridophyte Cover = 0.0

continued ...

Reference Stand No. 04N Concluded.

CODE	Species	Frequency % 5x5 m Plots	Plant Cover Mean	S.D.	Rank
CLA MUL	*Cladonia multiformis*	47	0.023	0.040	14
CLA PHY	*Cladonia phyllophora*	93	1.85	2.35	3
CLA PYX	*Cladonia pyxidata*	13	0.001	0.004	28
CLA SUB	*Cladonia subulata*	.	.	.	.
CLA UNC	*Cladonia uncialis*	80	2.49	3.47	2
CLA VER	*Cladonia verticillata*	.	.	.	.
PEL APH	*Peltigera aphthosa*	.	.	.	.
PEL MAL	*Peltigera malacea*	73	1.15	1.34	5
PEL RUF	*Peltigera rufescens*	.	.	.	.
STE ALP	*Stereocaulon alpinum*	.	.	.	.
CLA CAR	*Cladonia cariosa*	7	0.0007	0.0026	32

Total Terrestrial Lichen Cover = 23.47%

Epiphytic Lichens

BRY SPP	*Bryoria species*	73	0.007	0.005	22
CET HAL	*Cetraria halei*	73	0.013	0.024	19
CET PIN	*Cetraria pinastri*	100	0.022	0.032	15
EVE MES	*Evernia mesomorpha*	33	0.015	0.035	18
HYP PHY	*Hypogymnia physodes*	73	0.007	0.005	23
PAR ELE	*Parmelia elegantula*	.	.	.	.
PAR SUL	*Parmelia sulcata*	20	0.002	0.004	27
PAR AMB	*Parmeliopsis ambigua*	93	0.087	0.254	10
PAR HYP	*Parmeliopsis hyperopta*	60	0.018	0.034	16
PLA GLA	*Platismatia glauca*	.	.	.	.
USN SPP	*Usnea species*	87	0.213	0.556	9

Total Epiphytic Lichen Cover = 0.384%

4.4.2 Synthesis Table for Stands Established in 1982

The synthesis table in this report, Table 5, is similar to Table 5 in the First Report. The similarity is to facilitate comparison and integration of the four new stands into the total permanent plot array. The four new stands are arranged in order of increasing age.

It should be noted that constancy percent in this table is based on the four new stands only.

4.4.3 Species Structure and Dominance Hierarchy of Reference Stands

For a discussion of this community characteristic, See section 4.4.3 First Report.

Graphic plots of species structure and dominance hierarchy for all stands are included in the Appendix as part of the computer output.

4.4.3.1 Vascular Plant Community

The four new stands established and surveyed in 1982 are typical of the *Pinus banksiana* forests and woodlands on light textured soils in the Oil Sands area. The general comments regarding this type of plant community (See section 4.4.3.1 First Report) hold for the four new stands.

4.4.3.2 Bryophyte and Lichen Community

Here, too, the general discussion given in the First Report is applicable. In addition, the occurrence of the crustose lichen *Lecidea granulosa* in stands 01N and 03N is perhaps noteworthy. This species grows as a crust on soil and particularly in 01N it probably has been an important soil stabilizing factor. Also, in stand 01N the epiphytic community is absent on tree bases and branches. In this stand the epiphytes are associated only with twigs and fallen wood on the ground.

[text resumes on page 36]

Table 5. Synthesis table showing the estimated % cover of major plant growth-forms[a]; the % Constancy of occurrence of species[b], and the cover-class[c] of species in the four new reference stands established in 1982 in the *Pinus banksiana* dominated permanent plots of the Athabasca Oil Sands area in northern Alberta.

Growth-Form / Species	Constancy (%)	Reference Stand Number 01N	03N	02N	04N
Tree		*6*	*11*	*14*	*10*
Pinus banksiana	100	5	6	6	6
Picea glauca	25	.	.	.	2
Picea mariana	.	.	.	.	.
Populus tremuloides	25	.	2	.	.
Populus balsamifera	.	.	.	.	.
Larix laricina	.	.	.	.	.
Shrub		*11*	*4*	*2*	*3*
Vaccinium myrtilloides	100	5	4	4	5
Vaccinium vitis-idaea	50	5	.	4	.
Arctostaphylos uva-ursi	100	5	5	4	5
Rosa acicularis	50	2	.	.	2
Prunus pensylvanica	75	4	3	.	2
Amelanchier alnifolia	75	2	1	.	2
Rubus strigosus	50	3	2	.	.
Lonicera dioica	.	.	.	.	.
Viburnum edule	.	.	.	.	.
Hudsonia tomentosa	50	.	2	.	1
Salix bebbiana	50	.	.	2	3
Alnus crispa	25	5	.	.	.
Ledum groenlandicum	.	.	.	.	.
Shepherdia canadensis	.	.	.	.	.
Salix pseudomonticola	.	.	.	.	.
Symphoricarpos albus	.	.	.	.	.
Vaccinium caespitosum	.	.	.	.	.
Betula pumila	.	.	.	.	.
Salix myrtillifolia	.	.	.	.	.
Salix sp.	25	.	4	.	.
Forb		*1*	*1*	*t*	*1*
Maianthemum canadense	100	4	4	4	4
Aster laevis	100	4	3	3	4
Anemone multifida	100	3	2	1	2

continued...

Table 5. Continued

Growth-Form / Species	Constancy (%)	Reference Stand Number 01N	03N	02N	04N
Galium boreale	50	3	.	2	.
Melampyrum lineare	25				3
Linnaea borealis	75	4	2	3	.
Campanula rotundifolia	100	2	3	1	2
Solidago decumbens	100	4	4	2	4
Viola adunca	75	2	2	.	2
Apocynum androsaemifolium	100	3	3	1	4
Comandra pallida	.	.	.	.	.
Fragaria virginiana	75	4	3	.	3
Potentilla tridentata	75	4	1	.	2
Geocaulon lividum	.	.	.	.	.
Pyrola virens	100	1	2	3	3
Hieracium canadense	25	.	.	.	3
Pyrola secunda	.	.	.	.	.
Epilobium angustifolium	25	3	.	.	.
Artemisia campestris	75	2	3	.	2
Aralia nudicaulis	.	.	.	.	.
Cornus canadensis	.	.	.	.	.
Lilium philadelphicum	.	.	.	.	.
Anemone patens	100	3	2	3	2
Trientalis borealis	25	.	.	.	1
Viola renifolia	.	.	.	.	.
Goodyera repens	25	.	.	.	1
Lathyrus ochroleucus	.	.	.	.	.
Vicia americana	.	.	.	.	.
Petasites palmatus	.	.	.	.	.
Aster ciliolatus	25	2	.	.	.
Achillea millefolium	75	3	1	.	2
Antennaria racemosa	25	3	.	.	.
Gentianella amarella	.	.	.	.	.
Rubus acaulis	.	.	.	.	.
Pyrola asarifolia	.	.	.	.	.
Mitella nuda	.	.	.	.	.
Draba sp.	.	.	.	.	.
Senecio sp.	50	3	.	2	.
Senecio cymbalarioides	75	.	1	2	2
Stellaria longipes	25	.	.	.	1
Arabis lyallii	25	.	.	.	2

Table 5. Continued

Growth-Form / Species	Constancy (%)	Reference Stand Number 01N	031	02N	04N
Graminoid		*1*	*t*	*t*	*t*
Oryzopsis pungens	100	4	3	3	4
Elymus innovatus	.	.	.	.	.
Carex umbellata	75	4	1	3	.
Carex foenea	75	3	3	.	3
Oryzopsis asperifolia	25	1	.	.	.
Agrostis scabra	50	2	2	.	.
Bromus ciliatus	.	.	.	.	.
Schizachne purpurascens	.	.	.	.	.
Juncus balticus	.	.	.	.	.
Elymus glaucus	.	.	.	.	.
Calamagrostis canadensis	.	.	.	.	.
Calamagrostis inexpansa	50	3	3	.	.
Carex sp.	.	.	.	.	.
Festuca saximontana	75	2	2	.	2
Pteridophyte		*t*	*o*	*o*	*o*
Equisetum variegatum	.	.	.	.	.
Lycopodium tristachyum	.	.	.	.	.
Lycopodium annotinum	.	.	.	.	.
Equisetum sylvaticum	.	.	.	.	.
Equisetum scirpoides	.	.	.	.	.
Equisetum pratense	.	.	.	.	.
Lycopodium clavatum	.	.	.	.	.
Equisetum arvense	.	.	.	.	.
Selaginella densa	25	1	.	.	.
Bryophyte		*7*	*12*	*1*	*1*
Aulacomnium palustre	.	.	.	.	.
Brachythecium salebrosum	.	.	.	.	.
Ceratodon purpureus	.	.	.	.	.
Dicranum polysetum	75	1	.	3	3
Dicranum scoparium	.	.	.	.	.
Ditrichum flexicaule	.	.	.	.	.
Drepanocladus uncinatus	.	.	.	.	.
Hylocomium splendens	75	1	.	3	1
Orthodicranum flagellare	.	.	.	.	.
Pleurozium schreberi	75	1	.	2	2
Pohlia nutans	.	.	.	.	.

continued...

Table 5. Continued

Growth-Form / Speices	Constancy (%)	Reference Stand Number 01N	03N	02N	04N
Polytrichum juniperinum	100	2	2	4	4
Polytrichum piliferum	100	5	6	2	4
Ptilidium ciliare	.	.	.	.	.
Ptilidium pulcherrimum	50	.	.	2	2
Ptilium crista-castrensis	25	.	.	1	.
Tetraplodon angustatus	.	.	.	.	.
Tomenthypnum nitens	.	.	.	.	.
Terrestrial Lichen		*20*	*7*	*85*	*23*
Cettaria ericetorum	100	3	4	3	3
Cetraria cucullata	.	.	.	.	.
Cetraria nivalis	50	.	.	3	.
Cladina mitis	100	6	5	6	6
Cladina rangiferina	25	.	.	3	.
Cladina stellaris	75	1	.	4	1
Cladonia amaurocraea	50	2	.	3	.
Cladonia capitate	25	.	1	.	.
Cladonia caricsa	.	.	.	.	1
Cladonia cenotea	100	1	2	1	1
Cladonia chlorophaea	100	3	2	3	3
Cladonia coccifera	75	4	3	.	3
Cladonia coniocraea	.	.	.	.	.
Cladonia cornuta	100	4	4	4	4
Cladonia crispata	25	.	.	.	2
Cladonia creitatella	100	4	3	2	2
Cladonia gonecha	100	2	2	3	2
Cladonia gracilis	100	4	4	4	5
Cladonia multiformis	100	3	3	3	3
Cladonia phyllophora	100	5	4	3	5
Cladonia pyxidata	75	3	2	.	2
Cladonia subulata	50	3	3	5	5
Cladonia uncialis	100	3	3	5	5
Cladonia verticillata	75	2	2	1	.
Lecidea granulosa	50	4	2	.	.
Peltigera aphthosa	75	3	3	3	.
Peltigera malacea	100	5	5	5	5
Peltigera rufescens	25	2	.	.	.
Stereocaulon alpinum	25	2	.	.	.

continued...

Table 5. Concluded

Growth-Form / Species	Constancy (%)	Reference Stand Number 01N	03N	02N	04N
Epiphytic Lichen		*t*	*t*	*t*	*t*
Bryoria spp.	100	1	2	3	2
Cetraria halei	100	2	2	4	3
Cetraria pinastri	100	3	3	3	3
Evernia mesomorpha	100	1	2	3	3
Hypogymnia physodes	100	3	3	3	2
Parmelia elegantula	.	.	.	.	.
Parmelia sulcata	75	2	.	3	2
Parmeliopois ambigua	100	3	3	3	3
Parmeliopsis hyperopta	100	2	2	3	3
Platismatia glauca	.	.	.	.	.
Usnea spp.	100	2	3	4	4

[a] % Cover of growth-forms was calculated as the sum of the mean % cover values of component species from Table 4, and printed in italicized numbers; *t* = less than 0.5% cover, i.e., 'trace'.

[b] Constancy values expressed as % occurrence of a species in reference stand nos. 01N-04N, all of which occur on Dystric Brunisolic sand soils.

[c] Cover-classes are logarithmic: 1 = 0.0001 to 0.001%; 2 = > 0.001 to 0.01%; 3 = > 0.01 to 0.1%; 4 = > 0.1 to 1.0%; 5 = > 1.0 to 10%; 6 = > 10 to 100%. (see section 4.4.2, First Report).

4.5 SOME COMPARISONS OF 1981 AND 1982 SURVEY DATA

4.5.1 Total Plant Cover in 12 Reference Stands

Figure 2 shows the relationship between total cover % for 1981 and 1982 for three major plant groups: Vascular plants, Bryophytes and Terrestrial Lichens. Neither the four new reference stands nor the four which burned in 1981 are considered here.

The range and mean value for Cover % change between 1981 and 1982 for the 12 reference stands are:

Vascular plants	+2.5 to + 18.6; mean + 10.7
Bryophytes	-1.0 to + 17.2; mean + 1.9
Lichens	-4.2 to + 14.3; mean + 6.0

From the above and from Fig. 2 it is evident that there was a notable over-all increase in cover between August 1981 and August 1982. What part of the increase is due to the presumably more favourable moisture and temperature conditions in 1982 as compared to 1981 and what part of the increase may be due to other factors is not clear at present.

Moisture conditions are probably the key factor responsible for the increased vascular plant cover but microhabitat changes related to successional change, particularly tree canopy height and density, are without a doubt involved. The quantitative aspects and rates of change in microhabitats beneath the dominant vegetation canopy and the corresponding responses in subordinate communities are not yet known.

If only the brophyte cover data are considered (see Fig. 2) it can be seen that departures from no change between 1981 and 1982 are small except for Reference Stand 16. If Stand 16 is deleted the mean change in Cover % 1981 to 1982 for the remaining 11 stands becomes + 0.5 %; essentially no change. It is unlikely that growing conditions related to macroclimate are responsible for the anomalous increase in bryophyte cover in Stand 16. It seems possible, based on observations made in connection with the SEADYN project at Hondo and elsewhere, that the successional transition from a lichen-dominated to a bryophyte-dominated non-vascular flora can occur relatively quickly (5 y $\pm$,?). It may be that we are looking at Stand 16 during

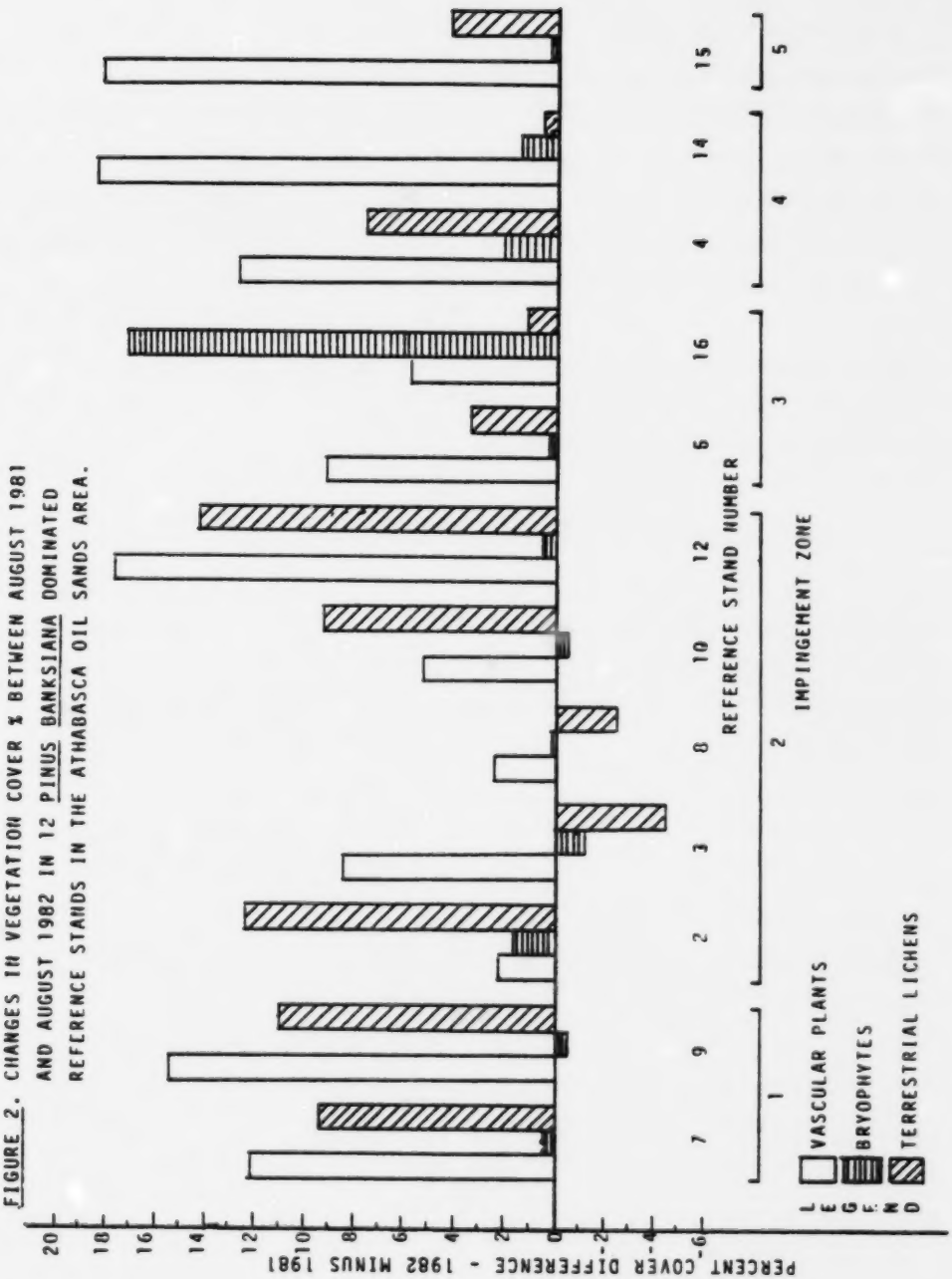


FIGURE 2. CHANGES IN VEGETATION COVER % BETWEEN AUGUST 1981 AND AUGUST 1982 IN 12 PINUS BANKSIANA DOMINATED REFERENCE STANDS IN THE ATHABASCA OIL SANDS AREA.

such a transition. If the hypothesis is valid a surge in bryophyte cover should occur in Stand 15 before too many years. Although cover of bryophytes in Stand 15 is under 6% the frequency of the feather mosses is high: *Pleurozium schreberi* 100%, *Hylocomium splendens* 87%, *Ptilium crista-castrensis* 87%. Stand 15 (in Impingement Zone 5) is, in effect, fully colonized by the feather mosses but the area is as yet not fully exploited.

The significance of the foregoing is that rather dramatic changes in cover of bryophytes or lichens might be part of a normal sequence of change. Until normal successional changes in the Oil Sands Area are better understood interpretations of changes in the flora which implicate factors extrinsic to the plant community should be made with considerable reserve.

4.5.2 Comparison of Selected Community Statistics

Table 6 provides comparative data for all stands surveyed in 1981 and 1982. Vascular plants, bryophytes, and terrestrial lichens are each treated separately. Community attributes included are: Species Richness (R), Dominance Index (D), Diversity Index (E'), Total Cover (%) and change in cover between the two years (Δ), where applicable.

Vascular Plants, R: A few more species were recorded present in 1982 compared to 1981. Six stands showed an increase, three a decrease and three no change. This is probably due to better moisture conditions and greater visibility of rare or ephemeral species. No trend related to impingement zones is evident.

Vascular Plants, D: Of the 12 unburned stands surveyed in both 1981 and 1982, eight decreased in D, three increased and one remained unchanged. The inference is that the better growing conditions in 1982 compared to 1981 led to a more even distribution of cover among vascular species in the stands.

Vascular Plants, E': Of the 12 unburned stands surveyed in both 1981 and 1982, nine increased in E' and three decreased. This increase in vascular plant diversity in 1982 compared to 1981 is due to increases in both R and D of the stands.

Vascular Plants, Total Cover %: There was an over-all increase in vascular plant cover from 1981 to 1982. (See Fig. 2 and section 4.5.1 of this report).

In summary, the summer of 1982 was much more favorable for vascular plants than that of 1981 with regard to species richness, species evenness, species diversity and total plant cover. The vascular plant community shows no evidence of pollution-induced or -correlated trends in community indices or total cover at this time.

Bryophytes, *R*: There were no significant changes in number of species per stand between 1981 and 1982.

Bryophytes, *D*: of the 12 unburned stands surveyed in 1981 and 1982, five increased in *D*, six decreased, one remained the same from 1981 to 1982. There is no apparent trend in the dominance indices.

Bryophytes, *H'*: Six stands increased in *H'* and six decreased from 1981 to 1982. No trend is shown.

Bryophytes, Total Cover %: (See Fig. 2 and section 4.5.1 of this report).

In summary, of the four community indices monitored, only Total Bryophyte Cover % showed a significant change which was mainly confined to Reference Stand 16. Otherwise there was little observable change between 1981 and 1982.

Terrestrial Lichens, *R*: The number of lichen species recorded per stand increased in eight, decreased in two and remained the same in two of the 12 unburned stands surveyed in both 1981 and 1982. The increase may be attributed to (a) better visibility of lichens because of more moist conditions in 1982, (b) better growing conditions in 1982, and (c) increased knowledge of the lichen flora.

Terrestrial Lichens, *D*: *D* increased in seven, decreased in five of the stands between 1981 and 1982. No significant trend is apparent.

Terrestrial Lichens, *H'*: *H'* increased in eight, decreased in four of the 12 unburned stands surveyed in 1981 and 1982. The increase in *H'* between 1981 and 1982 is probably due to an increase in both *R* and evenness.

Table 6. Vascular plant species richness, dominance index, diversity index, and total cover in 20 *Pinus banksiana*-dominated reference stands of the Athabasca Oil Sands region of north-eastern Alberta in 1981 and 1982. Indices defined in Methods.

Impingement Zone	Reference Stand	Species Richness (R, no. spp.)		Dominance Index (D)		Diversity Index (H')		Total Cover %		Δ
		1981	1982	1981	1982	1981	1982	1981	1982	'82-'81
0	6B	16	.	0.661	.	0.710	.	10.8	.	.
	13B	12	.	0.916	.	0.212	.	12.8	.	.
	N1	.	36	.	0.204	.	1.991	.	18.51	.
	N2	.	19	.	0.743	.	0.642	.	16.20	.
1	1B	32	36	0.219	0.081	1.994	2.769	11.7	3.92	- 7.78
	11B	36	26	0.196	0.164	2.077	2.161	34.1	4.64	-29.46
	7	32	32	0.443	0.274	1.398	1.751	21.2	33.31	+12.11
	9	42	42	0.220	0.181	1.973	2.037	25.3	40.68	+15.38
	N3	.	30	.	0.551	.	0.983	.	15.39	.
	N4	.	32	.	0.512	.	1.138	.	14.51	.
2	2	10	10	0.951	0.902	0.121	0.208	28.3	30.37	+ 2.07
	3	35	43	0.198	0.230	1.057	1.966	42.0	50.46	+ 8.46
	8	20	19	0.255	0.347	1.776	1.544	11.2	13.71	+ 2.51
	10	18	19	0.286	0.270	1.443	1.465	20.7	25.99	+ 5.29
	12	17	16	0.372	0.338	1.302	1.253	15.9	33.69	+17.79
3	5	22	25	0.418	0.303	1.266	1.455	26.0	35.19	+ 9.19
	16*	46	50	0.166	0.138	2.266	2.440	45.3	51.26	+ 5.96
4	4	26	24	0.201	0.202	1.855	1.874	20.7	33.46	+12.76
	14	23	24	0.178	0.243	1.999	1.809	23.5	42.05	+18.55
5	15*	43	44	0.201	0.184	2.028	2.106	42.1	60.39	+18.29

B burned over in autumn 1981
N newly established in summer 1982
* on heavy-textured soil.

Table 6. Bryophyte species richness, dominance index, diversity index, and total cover in 20 *Pinus banksiana*-dominated reference stands of the Athabasca Oil Sands region of northeastern Alberta in 1981 and 1982. Indices defined in Methods.

Impingement Zone	Reference Stand	Species Richness (R, no. spp.)		Dominance Index (D)		Diversity Index (H')		Total Cover %		Total Cover Δ
		1981	1982	1981	1982	1981	1982	1981	1982	'82-'81
0	6B	1	.	1.000	.	0.000	.	0.4	.	.
	13B	2	.	0.625	.	0.562	.	0.03	.	.
	N1	.	5	.	0.999	.	0.006	.	7.03	.
	N2	.	7	.	0.659	.	0.670	.	0.547	.
1	1B	2	.	0.980	.	0.057	.	2.7	.	.
	11B	6	.	0.864	.	0.310	.	68.7	.	.
	7	10	10	0.264	0.329	1.525	1.349	0.4	0.77	+ 0.37
	9	10	9	0.888	0.637	0.302	0.719	16.0	19.06	+ 3.06
	N3	.	2	.	0.999	.	0.005	.	11.87	.
	N4	.	6	.	0.481	.	0.848	.	0.89	.
2	2	2	3	0.998	0.995	0.007	0.019	1.2	2.81	+ 1.71
	3	11	9	0.659	0.668	0.697	0.625	3.8	1.79	- 1.01
	8	1	2	1.000	0.980	0.000	0.057	0.1	0.13	+ 0.03
	10	9	7	0.534	0.406	0.798	1.046	2.8	2.28	- 0.52
	12	8	7	0.313	0.389	1.410	1.127	5.3	5.91	+ 0.61
3	5	7	8	0.265	0.567	1.517	0.866	0.02	0.15	+ 0.13
	16*	12	10	0.604	0.572	0.755	0.726	30.3	47.53	+17.23
4	4	7	6	0.893	0.709	0.446	0.604	1.6	3.60	+ 2.00
	14	8	8	0.463	0.321	0.990	1.312	0.6	1.95	+ 1.35
5	15*	13	12	0.385	0.438	1.075	0.992	5.5	5.75	+ 0.25

B burned over in autumn 1981.
N newly established in summer 1982.
* on heavy-textured soil.

Table 6. Terrestrial lichen species richness, dominance index, diversity index, and total cover in 20 *Pinus banksiana*-dominated reference stands of the Athabasca Oil Sands region of north-eastern Alberta in 1981 and 1982. Indices defined in Methods.

Impingement zone	Reference stand	Species Richness (R, no. spp.)		Dominance Index (D)		Diversity Index (H')		Total Cover %		Δ
		1981	1982	1981	1982	1981	1982	1981	1982	'82-'81
0	6B	17	.	0.787	.	0.506	.	66.4	.	.
	13B	14	.	0.398	.	1.079	.	69.2	.	.
	N1	.	22	.	0.575	.	1.043	.	19.5	.
	N2	.	18	.	0.820	.	0.452	.	85.2	.
1	1B	10	.	0.231	.	1.636	.	12.0	.	.
	11B	14	.	0.335	.	1.603	.	0.7	.	.
	7	20	20	0.874	0.858	0.324	0.373	46.8	56.2	+9.4
	9	15	17	0.911	0.864	0.248	0.333	43.6	54.7	+11.1
	N3	.	20	.	0.339	.	1.434	.	7.2	.
	N4	.	17	.	0.506	.	1.105	.	22.1	.
2	2	13	16	0.344	0.600	1.229	0.897	27.4	39.9	+12.5
	3	19	18	0.972	0.971	0.104	0.099	46.0	41.4	-4.6
	8	15	22	0.973	0.911	0.124	0.285	76.3	73.7	-2.6
	10	17	22	0.904	0.862	0.271	0.387	66.6	75.8	+9.2
	12	20	19	0.670	0.788	0.770	0.522	30.3	44.6	+14.3
3	5	16	19	0.963	0.892	0.124	0.294	66.5	69.9	+3.4
	16*	15	16	0.200	0.572	1.848	0.726	1.8	2.9	+1.1
4	4	20	20	0.768	0.781	0.585	0.590	21.9	39.7	+7.8
	14	16	17	0.382	0.277	1.367	1.716	2.9	3.5	+0.6
5	15*	17	20	0.652	0.614	0.846	0.959	6.2	10.4	+4.2

B burned over in autumn 1981.
N newly established in summer 1982.
* on heavy-textured soil.

Terrestrial Lichens, Total Cover %: (See Fig. 2 and section 4.5.1 of this report).

In summary, the terrestrial lichen community increased in richness, diversity and cover between 1981 and 1982 in most of the 12 unburned stands surveyed in both years. The increase is probably due to the better growing conditions and the better visibility of the lichens in 1982 as compared with 1981. No trends relating to the impingement zones are evident.

4.5.3 Comparison of 1981 and 1982 Cover Data for Four Selected Reference Stands

In an ordination (not shown) the 12 unburned stands fall into three groups based on vascular plant cover %. Low cover group: Stand No. 8 only 13.7%. Medium cover group: Stands No. 10,2,4,7,12, 5,9,14. Mean 34.3%, range 26% to 42%. High cover group: Stands No. 3,15,16. Mean 54.0%, range 50.5% to 60.4%. (The cover % values used above are based on the 1982 survey).

Table 7 was compiled to include stands representative of the three cover groups. Included in Table 7 are Stand No. 8 (Low cover group); Stands No. 5 and 14 (Medium cover group); and Stand No. 3 (High cover group). Changes in dominance hierarchy, i.e., changes in Cover Rank between 1981 and 1982 are expressed as Spearman's Rank Correlation coefficient, r_s, and it shows that there is very close correlation between 1981 and 1982 dominance hierarchy for the vascular plants. For the bryophytes and lichens the correlation is not as high, but nevertheless significant. It might be noted that Stand No. 3 was the first stand surveyed in 1981 and that $r_s = 0.571$ for bryophytes and lichens might be a reflection of lack of familiarity with the flora more than a reflection of changes in the dominance hierarchy.

[text resumes on page 52]

Table 7. Comparison of 1981 and 1982 plant cover data for Reference Stands No. 8,5,14, and 3 in *Pinus banksiana*-dominated permanent plots of the Athabasca Oil Sands area. Each reference stand is presented as a two-page data set, with stands arranged in order of increasing vascular plant cover.

ATHABASCA OIL SANDS ECOLOGICAL MONITORING PROJECT

Comparison of 1981 and 1982 Vascular Plant Cover Data.
Reference Stand No. 8.

Species	Cover % 1981	Cover % 1982	82-81 Δ	Rank Δ	Cover Rank 1981	Cover Rank 1982	d	d^2
PIBA	5.00	7.64	+2.64	+1	1	1	.	.
ARUV	2.10	2.06	-0.05	-5	2	2	.	.
VAVI	1.15	0.736	-0.414	-1	3	4	1	1
VAMY	0.816	1.052	+0.236	+2	4	3	1	1
ROAC	0.504	0.604	+0.100	+4	5	6	1	1
MACA	0.473	0.6764	+0.2034	+3	6	5	1	1
ASLA	0.408	0.3564	-0.0516	-4	7	7	.	.
APAN	0.404	0.2768	-0.1272	-2	8	8	.	.
SODE	0.205	0.1484	-0.0566	-3	9	9	.	.
PRPE	0.0764	0.072	-0.0044	.	10	10	.	.
ORPU	0.034	0.0152	-0.0188	-6	11	12	1	1
CARO	0.0164	0.0100	-0.0064	.	12	13	1	1
MELI	0.012	0.0444	+0.0324	+5	13	11	2	4
HICA	0.0108	.	-0.0108	-7	14	21.5	7.5	56.25
ANMU	0.0084	0.0052	-0.0032	.	15	14	1	1
CXFO	0.0064	0.0040	-0.0024	.	16	16.5	0.5	0.25
POTRI	0.0056	.	-0.0056	.	17	21.5	4.5	20.25
CXUM	0.0052	0.0048	-0.0004	.	18	15	3	9
PYVI	0.0008	.	-0.0008	.	19	21.5	2.5	6.25
ANPA	0.0004	.	-0.0004	.	20	21.5	1.5	2.25
PRVI	.	0.0004	+0.0004	+8	22	19	3	9
AGSC	.	0.0008	+0.0008	+7	22	18	4	16
POTR	.	0.0040	+0.0040	+6	22	16.5	5.5	30.25
Totals	11.20	13.71	+2.51	8+,15-	.	.	r_s = + 0.921	

ATHABASCA OIL SANDS ECOLOGICAL MONITORING PROJECT

Comparison of 1981 and 1982 Bryophyte and Lichen Cover Data.
Reference Stand No. 8.

Species	Cover % 1981	Cover % 1982	82-81 Δ	Rank Δ	Cover Rank 1981	Cover Rank 1982	d	d^2
POL JUN	.	0.001	+0.001	.	28.5	26.5	2	4
POL PIL	0.088	0.128	+0.040	.	10	11	1	1
CET ERI	0.214	0.214	0.0	.	2	6	4	16
CET NIV	0.004	0.025	+0.021	.	21.5	18	3.5	12.25
CLA MIT	75.3	70.3	-5.00	-1	1	1	.	.
CLA RAN	0.003	0.001	-0.02	-3	23	26.5	3.5	12.25
CLA STE	0.130	0.442	+0.312	+3	4	4	.	.
CLA CAP	0.0007	0.001	+0.0003	.	26.5	27	1.5	2.25
CLA CEN	.	0.004	+0.004	.	28.5	24	4.5	20.25
CLA CHL	0.031	0.115	+0.084	.	14	12	2	4
CLA COC	.	0.029	+0.029	.	28.5	17	11.5	132.25
CLA COR	0.124	0.213	+0.089	+7	6	7	1	1
CLA CRP	.	0.0007	+0.0007	.	28.5	30.5	2	4
CLA CRT	0.069	0.051	-0.018	-4.5	12	13	1	1
CLA GON	0.151	0.033	-0.018	-4.5	3	16	13	169
CLA GRA	0.070	0.207	+0.137	+5	11	8	3	9
CLA MUL	0.016	0.741	+0.725	+1	16	3	13	169
CLA PHY	0.039	0.174	+0.135	+6	13	10	3	9
CLA PYX	.	0.001	+0.001	.	28.5	26.5	2	4
CLA SUB	.	0.0007	+0.0007	.	28.5	30.5	2	4
CLA UNC	0.121	0.314	+0.193	+4	7	5	2	4
CLA VER	.	0.0007	+0.0007	.	28.5	30.5	2	4
PEL MAL	0.100	0.813	+0.713	+2	8	2	6	36
PEL RUF	.	0.0007	+0.0007	.	28.5	30.5	2	4
BRY SPP	0.004	0.010	+0.006	.	21.5	22	0.5	0.25
CET HAL	0.011	0.016	+0.005	.	18	20	2	4
CET PIN	0.094	0.046	-0.048	-2	9	14	5	25
EVE MES	0.011	0.010	-0.001	-7	19.5	22	2.5	6.25
HYP PHY	0.021	0.040	+0.019	.	15	15	.	.
PAR AMB	0.129	0.177	+0.048	.	5	9	4	16
PAR HYP	0.011	0.021	+0.010	.	19.5	19	0.5	0.25
USN SPP	0.012	0.010	-0.002	-6	17	22	4	16
Totals	76.72	74.18	-2.54	24+,8-	.	.	r_s = + 0.874	

ATHABASCA OIL SANDS ECOLOGICAL MONITORING PROJECT

Comparison of 1981 and 1982 Vascular Plant Cover Data.
Reference Stand No. 5.

Species	Cover % 1981	Cover % 1982	82-81 Δ	Rank Δ	Cover Rank 1981	Cover Rank 1982	d	d^2
PIBA	15.80	15.24	-0.56	.	1	1	.	.
VAVI	5.00	10.64	+5.64	+1	1	1	.	.
ARUV	2.02	3.184	+1.164	+3	3	4	+1	1
VAMY	1.98	4.42	2.44	+2	4	3	-1	1
MACA	0.312	0.3764	+0.0644	+5	5	6	+1	1
SABE	0.248	0.480	+0.232	+4	6	5	-1	1
ASLA	0.167	0.1584	-0.0086	.	7	7	.	.
PRPE	0.128	0.0884	-0.0396	.	8	11	+3	9
APAN	0.106	0.1384	+0.0324	+9	9	8	-1	1
AMAL	0.077	0.0072	+0.0402	+7	10	9	-1	1
ROAC	0.048	0.100	+0.052	+6	11	10	-1	1
LIBO	0.040	0.080	+0.040	+8	12	12	.	.
CXFO	0.031	0.0180	-0.013	.	13	16	+3	9
ORPU	0.028	0.0304	+0.0024	.	14	15	+1	1
ANMU	0.021	0.0048	-0.0162	.	15	19	+4	16
MELI	0.020	0.0444	+0.0244	+10	16	13	-3	9
SODE	0.010	0.0308	+0.0208	+11	17	14	-3	9
PYVI	0.008	0.0128	+0.0048	.	18	17	-1	1
EQVA	0.004	0.0040	0.0	.	19	21.5	+2.5	6.25
CARO	0.0032	0.0060	+0.0028	.	20	18	-2	4
FRVI	0.0004	.	-0.0004	.	21.5	(26)	+4.5	20.25
HICA	0.0004	0.0012	+0.0008	.	21.5	24	+2.5	6.25
SAPS	.	0.0040	+0.004	.	(24.5)	21.5	-3	9
SASP	.	0.0040	+0.004	.	(24.5)	21.5	-3	9
POTRI	.	0.0040	+0.004	.	(24.5)	21.5	-3	9
CXUM	.	0.0004	+0.0004	.	(24.5)	2.5	+0.5	0.25
Totals	26.00	35.19	+9.19	19+,6-	.	.	r_s = + 0.957	

ATHABASCA OIL SANDS ECOLOGICAL MONITORING PROJECT

Comparison of 1981 and 1982 Bryophyte and Lichen Cover Data.
Reference Stand No. 5.

Species	Cover % 1981	Cover % 1982	82-81 Δ	Rank Δ	Cover Rank 1981	Cover Rank 1982	d	d^2
BRA SAL	.	0.0007	+0.0007	.	35.5	34	1.5	2.25
DIC POL	0.005	0.024	+0.019	.	21.5	15	6.5	42.25
DIC SCO	0.001	0.0007	-0.0003	.	27	34	7	49
PLE SCH	0.001	0.001	0.0	.	28	31	3	9
POH NUT	0.0007	.	-0.0007	.	30.5	37.5	7	49
POL JUN	0.0007	0.012	+0.0113	.	30.5	19	11.5	132.25
POL PIL	0.009	0.109	+0.100	+7	18	8	10	100
PTI PUL	.	0.0007	+0.0007	.	35.5	34	1.5	2.25
PTI C-C	0.007	.	-0.007	-6	20	37.5	17.5	306.25
TET ANG	.	0.0007	+0.0007	.	35.5	34	1.5	2.25
CET ERI	0.020	0.141	+0.121	+6	10	6	4	16
CET NIV	0.0007	0.003	+0.0023	.	30.5	28	2.5	6.25
CLA MIT	65.3	66.0	+0.70	+2	1	1	.	.
CLA RAN	0.002	0.001	-0.001	.	25.5	31	5.5	30.25
CLA STE	0.039	0.375	+0.336	+4	8	4	4	16
CLA CAP	.	0.001	+0.001	.	35.5	31	4.5	20.25
CLA CEN	.	0.003	+0.003	.	35.5	27	8.5	72.25
CLA CHL	0.015	0.020	+0.005	.	12	16	4	16
CLA COC	0.011	0.002	-0.009	-5	13.5	29	15.5	240.25
CLA COR	0.107	0.153	+0.046	.	5	5	.	.
CLA CRT	0.009	0.007	-0.002	-7	18	24.5	6.5	42.25
CLA GON	0.004	0.025	+0.021	.	23	13	10	100
CLA GRA	0.256	0.068	-0.188	-1	3	10	7	49
CLA MUL	0.011	0.454	+0.443	+3	13.5	3	10.5	110.25
CLA PHY	0.003	0.135	+0.132	+5	24	7	17	289
CLA UNC	0.111	0.062	-0.049	-4	4	11	7	49
PEL APH	.	0.007	+0.007	.	35.5	24.5	11	121
PEL MAL	0.573	2.473	+1.90	+1	2	2	.	.
PEL RUF	0.080	0.007	-0.073	-2	7	24.5	17.5	306.25
BRY SPP	0.010	0.010	0.0	.	15.5	21	5.5	30.25
CET HAL	0.009	0.016	+0.007	.	18	17.5	0.5	0.25
CET PIN	0.034	0.082	+0.048	.	9	9	.	.
EVE MES	0.005	0.016	+0.011	.	21.5	17.5	4	16
HYP PHY	0.016	0.028	+0.012	.	11	14	3	9
PAR SUL	0.0007	0.007	+0.0063	.	30.5	24.5	6	36
PAR AMB	0.088	0.034	-0.054	-3	6	12	6	36
PAR HYP	0.002	0.010	+0.008	.	25.5	21	4.5	20.25
USN SPP	0.010	0.010	0.0	.	15.5	21	5.5	30.25
Totals	66.74	70.30	+3.56	25+,10-	.	.	r_s = + 0.742	

ATHABASCA OIL SANDS ECOLOGICAL MONITORING PROJECT

Comparison of 1981 and 1982 Vascular Plant Cover Data.
Reference Stand No. 14.

Species	Cover % 1981	Cover % 1982	82-81 Δ	Rank Δ	Cover Rank 1981	Cover Rank 1982	d	d^2
ARUV	7.04	17.76	+10.72	+1	1	1	.	.
PIBA	4.78	8.00	+3.22	+2	2	2	.	.
VAVI	3.64	4.72	+1.08	+4	3	3	.	.
VAMY	2.96	4.42	+1.46	+3	4	4	.	.
LIBO	1.22	2.18	+0.96	+5	5	5	.	.
GELI	0.916	0.664	-0.252	-1	6	9	3	9
MACA	0.872	0.972	+0.100	9	7	8	1	1
COPA	0.744	0.984	+0.24	7	8	7	1	1
COCA	0.696	1.268	+0.572	6	9	6	3	9
AMAL	0.185	0.2564	+0.0714	12	10	10	.	.
ELIN	0.163	0.1212	+0.0418	-2	11	13	2	4
ORPU	0.150	0.2296	+0.0796	10	12	11	1	1
MELI	0.0748	0.2084	+0.1336	8	13	12	1	1
ROAC	0.024	0.008	-0.016	.	14	21	7	49
LEGR	0.020	0.040	+0.020	.	15	16	1	1
POTRI	0.014	0.0896	+0.0756	11	16	14	2	4
CARO	0.0112	0.0164	+0.0052	.	17	19	2	4
EQVA	0.0040	.	-0.004	.	18.5	25	6.5	42.25
EPAN	0.0040	0.004	0.0	.	18.5	22	3.5	12.25
PYVI	0.0024	0.0604	+0.058	.	20	15	5	25
ORAS	0.0021	0.0212	+0.0191	.	21	17	4	16
CXFO	0.0012	0.0088	+0.0076	.	22	20	2	4
HICA	0.0008	0.0008	0.0	.	23	23	.	.
VIAD	0.0	0.0008	+0.0008	.	24.5	24	0.5	0.25
EQSY	0.0	0.0204	+0.0204	.	24.5	18	6.5	42.25
Totals	23.5	42.07	+18.57	19+,4-	.	.	r_s = + 0.913	

ATHABASCA OIL SANDS ECOLOGICAL MONITORING PROJECT

Comparison of 1981 and 1982 Bryophyte and Lichen Cover Data.
Reference Stand No. 14.

Species	Cover % 1981	Cover % 1982	82-81 Δ	Rank Δ	Cover Rank 1981	Cover Rank 1982	d	d^2
AUL PAL	.	.	.	.	.	.	.	.
BRA SAL	.	.	.	.	.	.	.	.
CER PUR	0.007	0.001	-0.006	-7	20.5	31.5	11	121
DIC POL	0.039	0.235	+0.196	+5	11	8.5	25	6.25
DIC SCO	0.175	0.441	+0.266	+3	7	4	3	9
HYL SPL	0.001	0.009	+0.008	.	28	26	2	4
PLE SCH	0.367	0.933	+0.566	+1	3	2	1	1
POL JUN	0.009	0.315	+0.306	+2	18	5	13	169
POL PIL	0.002	0.009	+0.007	.	27	25	2	4
PTI PUL	0.0007	0.007	+0.0063	.	31	27.5	3.5	12.25
CET ERI	0.009	0.0007	-0.0083	-6	17	33.5	16.5	272.25
CLA MIT	0.299	0.492	+0.193	+6	4	3	1	1
CLA AMA	.	0.0007	+0.0007	.	35	33.5	1.5	2.25
CLA CAP	0.0007	0.001	+0.0003	.	31	31.5	0.5	0.25
CLA CEN	0.0007	.	-0.0007	.	31	35.5	4.5	20.25
CLA CHL	0.105	0.032	-0.073	-3	9	15	6	36
CLA COC	0.004	0.023	+0.019	.	24	17	7	49
CLA CON	0.003	0.007	+0.004	.	25.5	27.5	2	4
CLA COR	0.195	0.289	+0.094	.	6	6	.	.
CLA CRP	0.0007	.	-0.0007	.	31	35.5	4.5	20.25
CLA CRT	0.005	0.019	+0.014	.	23	21	2	4
CLA GON	0.003	0.003	0.0	.	25.5	29	3.5	12.25
CLA GRA	0.370	0.249	-0.121	-1	2	7	5	25
CLA MUL	.	0.183	+0.183	+7	35	11	24	576
CLA PHY	.	0.235	+0.235	+4	35	8.5	26.5	702.25
CLA UNC	0.211	0.226	+0.015	.	5	10	5	25
CLA VER	0.0007	0.002	+0.0013	.	31	30	1	1
PEL APH	0.007	0.029	+0.022	.	20.5	16	4.5	20.25
PEL MAL	1.730	1.673	-0.057	-4	1	1	.	.
BRY SPP	0.010	0.010	0.0	.	15.5	22	6.5	42.25
CET HAL	0.007	0.010	+0.003	.	20.5	22	1.5	2.25
CET PIN	0.010	0.022	+0.012	.	15.5	18.5	3	9
EVE MES	0.026	0.010	-0.016	-5	13	22	9	81
HYP PHY	0.040	0.064	+0.024	.	10	12.5	2.5	6.25
PAR SUL	0.007	0.021	+0.014	.	20.5	20	0.5	0.25
PAR AMB	0.028	0.046	+0.018	.	12	14	2	4
PAR HYP	0.011	0.022	+0.011	.	14	18.5	4.5	20.25
USN SPP	0.142	0.064	-0.078	-2	8	12.5	4.5	20.25
Totals	3.83	5.69	+1.86	25+,9-	.	.		$r_s = 0.706$

ATHABASCA OIL SANDS ECOLOGICAL MONITORING PROJECT

Comparison of 1981 and 1982 Vascular Plant Cover Data.
Reference Stand No. 3.

Species	1981	1982	82-81 Δ	Rank Δ	Cover Rank 1981	Cover Rank 1982	d	d^2
ARUV	14.40	20.44	+6.04	+ 1	1	1	.	.
VAVI	8.14	7.00	-1.14	- 1	2	3	1	1
PIBA	7.56	9.30	+1.74	+ 2	3	2	1	1
VAMY	3.38	4.880	+1.50	+ 3	4	4	.	.
ALCR	1.88	1.28	-0.60	- 2	5	6	1	1
MACA	1.27	1.864	+0.594	+ 4	6	5	1	1
LIBO	0.612	0.644	+0.032	.	7	8	1	1
ARNU	0.604	0.932	+0.328	+ 5	8	7	1	1
MELI	0.592	0.496	-0.096	- 5	9	10	1	1
AMAL	0.580	0.432	-0.148	- 3	10	12	2	4
ROAC	0.524	0.504	-0.020	.	11	9	2	4
COPA	0.512	0.492	-0.020	.	12	11	1	1
ELIN	0.276	0.1492	-0.1268	- 4	13	17	0.4	16
ORPU	0.189	0.2496	+0.0606	+ 8.5	14	13	1	1
PRPE	0.184	0.140	-0.044	.	15	20	5	25
GELI	0.160	0.180	+0.020	.	16	24	2	4
POTR	0.144	0.144	0.0	.	17	19	2	4
EPAN	0.124	0.0520	-0.072	- 6	18	27	9	81
LYTR	0.120	0.160	+0.040	+10	19	15	4	16
ANMU	0.117	0.0692	-0.0478	.	20	25	5	25
POTRI	0.089	0.1496	+0.0606	+ 8.5	21	16	5	25
GABO	0.085	0.112	+0.027	.	22	22	.	.
LODI	0.068	0.148	+0.080	+ 7	23	18	5	25
SODE	0.057	0.072	+0.015	.	24	24	.	.
HICA	0.050	0.0896	+0.0396	.	25	23	2	4
CARO	0.046	0.0316	-0.0144	.	26	33	7	4.9
PIGL	0.040	0.060	+0.020	.	27	26	1	1
PYVI	0.038	0.036	-0.002	.	28	31.5	3.5	12.25
LIPH	0.033	0.0032	-0.0298	.	29	42	3	9
FRVI	0.028	0.036	+0.008	.	30	31.5	1.5	2.25
COCA	0.024	0.040	+0.016	.	31	29.5	1.5	2.25
VIAD	0.0084	0.0080	-0.0004	.	32	37	5	25
ANPA	0.0080	0.0128	+0.0048	.	33	35.5	2.5	6.25
ASLA	0.0040	0.0040	0.0	.	34.5	40.5	6	36
SCPU	0.0040	0.0440	+0.04	+10	34.5	28	6.5	42.25
BEPA	.	.0044	+0.0044	.	39.5	38.5	1	1
SHCA	(P)	0.020	+0.020	.	39.5	34	5.5	30.25
PYSE	.	0.0008	+0.0008	.	39.5	43	3.5	12.25
SECY	.	0.040	+0.040	+10	39.5	29.5	10	100
CXFO	.	0.0044	+0.0044	.	39.5	38.5	1	1
ORAS	.	0.0128	+0.0128	.	39.5	35.5	4	16
CACA	.	0.0040	+0.0040	.	39.5	40.5	1	1
GORE	0.0	0.1200	+0.120	+ 6	39.5	21	18.5	342.25
Totals	42.0	50.46	+8.46	27+,14-	.	.		r_s = + 0.930

ATHABASCA OIL SANDS ECOLOGICAL MONITORING PROJECT

Comparison of 1981 and 1982 Bryophyte and Lichen Cover Data.
Reference Stand No. 3.

Species	Cover % 1981	Cover % 1982	82-81 Δ	Rank Δ	Cover Rank 1981	Cover Rank 1982	d	d^2
BRA SAL	0.009	0.0007	-0.0083	.	23	31	8	64
CER PUR	0.013	0.009	-0.004	.	19	14	5	25
DIC POL	0.415	0.309	-0.106	-4	3	4	1	1
DIC SCO	0.016	0.0	-0.016	.	16.5	37.5	21	441
HYP SPL	0.282	0.022	-0.260	-3	5	10	5	25
PLE SCH	3.01	1.43	-1.58	-2	2	2	.	.
POH NUT	.	0.0007	+0.0007	.	38	31	7	49
POL JUN	0.002	0.003	+0.001	.	28.5	21.5	7	49
POL PIL	0.007	0.008	+0.001	.	26	15	11	121
PTI CIL	0.0007	0.007	+0.0063	.	32.5	16.5	16	256
PTI C-C	0.003	.	-0.003	.	27	37.5	10.5	110.25
TOM NIT	0.0007	.	-0.0007	.	32.5	37.5	5	25
CET CUC	.	.	.	.	.	.	.	.
CET ERI	0.008	0.0007	-0.0073	.	25	31	6	36
CET NIV	0.002	0.001	-0.001	.	28.5	28	0.5	0.25
CLA MIT	45.3	40.8	-4.50	-1	1	1	.	.
CLA RAN	.	0.0007	+0.0007	.	38	31	7	49
CLA STE	0.030	0.103	+0.073	+2	13	5	8	64
CLA CAP	0.0007	0.0007	0.0	.	32.5	31	1.5	2.25
CLA CEN	0.009	0.005	-0.004	.	23	18	5	25
CLA CHL	0.021	0.140	+0.119	+1	14.5	13	1.5	2.25
CLA CON	0.011	0.001	-0.010	.	20.5	28	7.5	56.25
CLA COR	0.031	0.005	-0.026	-6	11.5	18	6.5	42.25
CLA CRP	0.021	0.0	-0.021	-7	14.5	37.5	23	529
CLA CRT	0.011	0.007	-0.004	.	20.5	16.5	4	16
CLA GON	0.001	0.003	+0.002	.	30	20	10	100
CLA GRA	0.009	0.015	+0.006	+5	23	12.5	10.5	110.25
CLA MUL	0.049	0.030	-0.019	.	8	9.5	1.5	2.25
CLA PHY	0.016	0.001	-0.015	.	16.5	28	11.5	132.25
CLA PYX	0.0007	0.0	-0.0007	.	32.5	37.5	5	25
CLA UNC	.	0.0007	+0.0007	.	38	31	7	49
PEL APH	0.080	0.073	-0.007	.	6	6	.	.
PEL MAL	0.293	0.354	+0.061	+3	4	3	1	1
PEL RUF	0.067	0.0	-0.067	-5	7	37.5	30.5	930.25
BRY SPP	.	0.002	+0.002	.	38	26	12	144
CET HAL	.	0.004	+0.004	+7	38	19	19	361
CET PIN	0.046	0.033	-0.013	.	9	8	1	1
EVE MES	.	0.003	+0.003	.	38	21.5	16.5	272.25
HYP PHY	0.031	0.031	0.0	.	11.5	9.5	2	4
PAR SUL	0.015	0.016	+0.001	.	18	12.5	5.5	30.25
PAR AMB	0.040	0.037	-0.003	.	10	7	3	9
PAR HYP	.	0.017	+0.017	+4	38	11	27	729
USN SPP	.	0.005	+0.005	+6	38	18	20	400
Totals	49.85	43.36	-6.49	17+,25-	.	.	r_s = + 0.571	

4.5.4 Computer Storage of Data

All the survey data for 1982 is on file in the University of Alberta Computing Centre as is also the vascular plant data for 1981. The bryophyte and lichen data for 1981 will be added as well as data from future surveys. Output for the 1982 data is included in the Appendix of this report.

5. DISCUSSION

5.1 NEW REFERENCE STANDS

Except for what appear to be minor differences the four new stands added to the permanent plot array are, on the basis of subjective inference as well as hard data, quite similar to the other stands on light textured soils.

5.2 COMPARISON OF 1981 AND 1982 DATA

The data synthesis methods used did not reveal any trends related to the defined impingement zones. As noted in section 4.5.1, until a fuller understanding of normal successional changes is in hand too much can not be said with assurance regarding pollution-induced changes. In this context we would urge that the burned stands 1B and 11B (see Fig. 1) be included in the permanent plot array and budgeted for accordingly.

6. REFERENCES CITED

First Report = La Roi and Ostafichuk, 1982a.

La Roi, G.H., and M. Ostafichuk. 1982a. Structural dynamics of boreal forest ecosystems on three habitat types in the Hondo - Lesser Slave Lake area of north central Alberta in 1981. Research Management Division, Alberta Environment, RMD-80/35A, and Recreation, Parks and Wildlife Foundation. 157 pp.

La Roi, G.H., and M. Ostafichuk. 1982b. Establishment and vegetation survey of 16 *Pinis banksiana*-dominated permanent plots for the Athabasca Oil Sands Ecological Monitoring Project in 1981. RMD Open File Report OF-34. Research Management Division, Alberta Environment. 133 pp.

Tande, G.F. 1979. Fire history and vegetation pattern of coniferous forests in Jasper National Park, Alberta. Canadian Journal of Botany 57: 1912-1931.

Thomson, B. 1981. Results of Project RMD 80-35B: Permanent sampling plots. Prep. for Research Management Division of Alberta Environment. 6 pp.

7. APPENDIX

7.1 1982 QUANTITATIVE DATA FOR REFERENCE STANDS: COMPUTER PRINT-OUT

The following 128 pages of computer output are drawn from the computer files of the AOSEMP Project, under the direction of Mr. Bill Lee, Computer Programmer-Analyst. Reference to appropriate sections of the First Report and the present report will help explain details in this section, which is mostly self-explanatory.

CPU TIME REQUIRED 0.31 SECONDS

```
168 VAR LABELS      PIBA Pinus banksiana /
169                 PIGL Picea glauca /
170                 PIMA Picea mariana /
171                 POTR Populus tremuloides /
172                 POBA Populus balsamifera /
173                 BEPA Betula papyrifera /
174                 LALA Larix laricina /
175                 VAMY Vaccinium myrtilloides /
176                 VAVI Vaccinium vitis-idaea /
177                 ARUV Arctostaphylos uva-ursi /
178                 ROAC Rosa acicularis /
179                 PRPE Prunus pensylvanica /
180                 AMAL Amelanchier alnifolia /
181                 RUST Rubus strigosus /
182                 LODI Lonicera dioica /
183                 VIED Viburnum edule /
184                 HUTO Hudsonia tomentosa /
185                 SABE Salix bebbiana /
186                 ALCR Alnus crispa /
187                 LEGR Ledum groenlandicum /
188                 SAPS Salix pseudomonticola /
189                 SYAL Symphoricarpos albus /
190                 BEPU Betula pumila /
191                 SASC Salix scouleriana /
192                 SHCA Shepherdia canadensis /
193                 SASP Salix sp. /
194                 VACA Vaccinium caespitosum /
195                 SAMY Salix myrtillifolia /
196                 HACA Halenthemum canadense /
197                 ASLA Aster laevis /
198                 ANMU Anemone multifida /
199                 GABO Galium boreale /
200                 MELI Melampyrum lineare /
201                 LIBO Linnaea borealis /
202                 CARO Campanula rotundifolia /
203                 SOMI Solidago decumbens /
204                 VIAD Viola adunca /
205                 APAN Apocynum androsaemifolium /
206                 COPA Comandra pallida /
207                 FRVI Fragaria virginiana /
208                 POTRI Potentilla tridentata /
209                 GELI Geocaulon lividum /
210                 PYVI Pyrola virens /
211                 HICA Hieracium canadense /
212                 PYSE Pyrola secunda /
213                 EPAN Epilobium angustifolium /
214                 ARCA Artemisia campestris /
215                 ARNU Aralia nudicaulis /
216                 COCA Cornus canadensis /
217                 LIPH Lilium philadelphicum /
218                 ANPA Anemone patens /
219                 TROB Trientalis borealis /
220                 VIRE Viola renifolia /
221                 EQRE Equisetum reams /
222                 LADC Lathyrus ochroleucus /
223                 VIAM Vicia americana /
224                 PEPA Petasites palmatus /
225                 ASCI Aster ciliolatus /
226                 ACMI Achillea millefolium /
227                 ANRA Antennaria racemosa /
228                 BRSP Bromus sp. /
229                 SESP Senecio sp. /
230                 SESE Senecio sp. /
231                 SECY Senecio cymbalarioides /
232                 STLO Stellaria longipes /
233                 RACE Ranunculus sp. /
234                 MINT Labiatae sp. /
235                 GERI Geranium bicknellii /
236                 ARLY Arabis lyallii /
237                 CHEN Chenopodium sp. /
238                 PELA Pedicularis labradorica /
239                 AQFL Aquilegia flavescens /
240                 GEAM Gentianella amarella /
241                 RUAC Rubus acaulis /
242                 PYAS Pyrola asarifolia /
243                 MINU Mitella nuda /
244                 ORPU Oryzopsis pungens /
245                 ELIN Elymus innovatus /
246                 CERI Carex richardsonii /
247                 CRPE Carex peckii /
248                 ORAS Oryzopsis asperifolia /
249                 AGSC Agrostis scabra /
250                 BRCI Bromus ciliatus /
251                 SEPU Senecionne purpurascens /
252                 JUBA Juncus balticus /
253                 ELEL Elymus glaucus /
254                 CACA Calamagrostis canadensis /
255                 CAIN Calamagrostis inexpansa /
256                 POSA Poa/sub saximontana /
257                 BRPU Bromus pumpellianus /
258                 CRSP Carex sp. /
259                 EQVA Equisetum variegatum /
260                 LYTR Lycopodium tristachyum /
261                 LYAN Lycopodium annotinum /
262                 EQSY Equisetum sylvaticum /
263                 EQSC Equisetum scirpoides /
264                 SEDE Selaginella dense /
265                 EQPR Equisetum pratense /
266                 LYCL Lycopodium clavatum /
267                 EQAR Equisetum arvense /
268                 TEMP Soil temperature 5-10 cm degrees F/
269                 PRVI Prunus virginiana /
270                 LOVI Lonicera villosa /
271                 PEGR Pedicularis groenlandica /
272                 EQPI Equetrum nigrum /
273                 TRBE    Total Tree Cover per Plot /
274                 TRBEDP  Tree Species Richness per Plot /
275                 SHRUB   Total Shrub Cover per Plot /
276                 SHRUBDP Shrub Species Richness per Plot /
277                 FORB    Total Forb Cover per Plot /
278                 FORBDP  Forb Species Richness per Plot /
279                 GRAM    Total Graminoid Cover per Plot/
280                 GRAMDP  Graminoid Species Richness per Plot /
281
```

Athabasca Oil Sands Geological Monitoring Program
August 1982 Survey of Vascular Plant Communities
in Pinus banksiana Reference Stands
Species Cover % Values By Quad & Plots

Stand	Plot	PIBA	PIGL	PIMA	POTR	POBA	BEPA	LALA	VAMY	VAVI	ARUV	ROAC	PRPE	AMAL	RUST	LOSI	VISE	HUTU	SARE
S01N																			
	0A	3.00	0.0	0.0	0.0	0.0	0.0	0.0	.10	4.00	3.00	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0
	0C	5.00	0.0	0.0	0.0	0.0	0.0	0.0	2.00	4.00	5.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0E	3.00	0.0	0.0	0.0	0.0	0.0	0.0	10.00	10.00	4.00	0.0	5.00	0.0	1.00	0.0	0.0	0.0	0.0
	0I	3.00	0.0	0.0	0.0	0.0	0.0	0.0	2.00	1.00	3.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0J	3.00	0.0	0.0	0.0	0.0	0.0	0.0	1.00	1.00	5.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2A	4.00	0.0	0.0	0.0	0.0	0.0	0.0	4.00	1.00	15.00	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0
	2C	4.00	0.0	0.0	0.0	0.0	0.0	0.0	2.00	.50	15.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2E	7.00	0.0	0.0	0.0	0.0	0.0	0.0	4.00	.10	15.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2G	7.00	0.0	0.0	0.0	0.0	0.0	0.0	.10	.50	4.00	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0
	2I	3.00	0.0	0.0	0.0	0.0	0.0	0.0	.50	.01	2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4A	3.00	0.0	0.0	0.0	0.0	0.0	0.0	2.00	1.00	2.00	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0
	4E	.10	0.0	0.0	0.0	0.0	0.0	0.0	2.00	1.00	8.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4G	6.00	0.0	0.0	0.0	0.0	0.0	0.0	4.00	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4I	15.00	0.0	0.0	0.0	0.0	0.0	0.0	.50	1.00	2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4J	10.00	0.0	0.0	0.0	0.0	0.0	0.0	.50	2.00	3.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6A		0.0	0.0	0.0	0.0	0.0	0.0	1.00	.50	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6C	7.00	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6E	5.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6G	6.00	0.0	0.0	0.0	0.0	0.0	0.0	2.00	2.00	3.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6I	6.00	0.0	0.0	0.0	0.0	0.0	0.0	1.00	.10	5.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6J	4.00	0.0	0.0	0.0	0.0	0.0	0.0	.10	.50	7.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	1.00	0.0	0.0	0.0	0.0	0.0	0.0	1.00	.10	3.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	15.00	0.0	0.0	0.0	0.0	0.0	0.0	.10	.50	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	20.00	0.0	0.0	0.0	0.0	0.0	0.0	1.00	2.00	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8I	3.00	0.0	0.0	0.0	0.0	0.0	0.0	2.00	0.0	17.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean		8.824	0	.0	.0	.0	.0	.0	1.676	1.382	5.088	.0040	.3044	.0080	.0400	.0	.0	0	.0
S03N																			
	0A	17.00	0.0	0.0	0.0	0.0	0.0	0.0	2.00	2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0C	13.00	0.0	0.0	0.0	0.0	0.0	0.0	1.00	2.00	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0E	20.00	0.0	0.0	0.0	0.0	0.0	0.0	.10	.50	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10
	0G	11.00	0.0	0.0	0.0	0.0	0.0	0.0	2.00	2.00	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0I	15.00	0.0	0.0	0.0	0.0	0.0	0.0	.01	1.00	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2A	7.00	0.0	0.0	0.0	0.0	0.0	0.0	.50	.10	2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2C	12.00	0.0	0.0	0.0	0.0	0.0	0.0	1.00	.10	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2E	13.00	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2G	15.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2I	15.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4A	17.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4C	17.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4E	15.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4G	15.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4I	8.00	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.00	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6A	4.00	0.0	0.0	0.0	0.0	0.0	0.0	4.00	.10	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6C	20.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6E	15.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6G	13.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6I	17.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6J	16.00	0.0	0.0	0.0	0.0	0.0	0.0	.50	.50	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	20.00	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	13.00	0.0	0.0	0.0	0.0	0.0	0.0	.50	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8I	10.00	0.0	0.0	0.0	0.0	0.0	0.0	.10	1.00	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean		13.83	.0	.0	.0	.0	.0	.0	.8384	.8380	.4760	.0	.0	.0	.0	.0	.0	.0	.0040
S03N																			
	0A	15.00	0.0	0.0	0.0	0.0	0.0	0.0	2.00	0.0	2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0C	25.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0E	10.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0G	3.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.00	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0
	0I	30.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0J	10.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2A	5.00	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2C	20.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2E	15.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2G	17.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2I	15.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4A	5.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4C	7.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4E	17.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4G	17.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4I	8.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.00	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0
	6A	17.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6C	3.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6E	15.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6G	3.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6I	7.00	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6J	11.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.00	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0
	8C	13.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	7.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8I	15.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean		11.84	0	0	.0040	0	.0	0	.1960	0	3.384	0	.0040	0	.0040	0	0	.0040	0
S04N																			
	0A	25.00	.10	0.0	0.0	0.0	0.0	0.0	2.00	0.0	3.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0C	3.00	0.0	0.0	0.0	0.0	0.0	0.0	2.00	0.0	3.00	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0E	3.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.00	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0
	0G	13.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0I	15.00	0.0	0.0	0.0	0.0	0.0	0.0	1	0.0	2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2A	15.00	0.0	0.0	0.0	0.0	0.0	0.0	1	0.0	2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2C	.10	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2E	3.00	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	3.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2G	30.00	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	3.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2I	2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4A	25.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4C	35.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4E	10.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.00	0.0	0.0	.10	0.0	0.0	0.0	0.0	.10
	4G	1.00	0.0	0.0	0.0	0.0	0.0	0.0	1	0.0	3.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4I	5.00	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	3.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6A	5.00	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	3.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6C	5.00	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	3.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6E	.10	0.0	0.0	0.0	0.0	0.0	0.0	2.00	0.0	1.00	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0
	6G	10.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6I	3.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6J	1.00	0.0	0.0	0.0	0.0	0.0	0.0	4.00	0.0	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Athabasca Oil Sands Ecological Monitoring Program
August 1982 Survey of Vascular Plant Communities
in Pinus banksiana Reference Stands
Species Cover % Values by 5x5 m Plots

Stand	Plot	PIBA	PICL	PIMA	POTR	POBA	BEPA	LALA	VAMY	VAVI	ARUV	RBAC	PRPE	AMAL	RUST	LODI	VIBO	NUTK	SASE
	8E	12.00	0.0	0.0	0.0	0.0	0.0	0.0	7.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	8.00	0.0	0.0	0.0	0.0	0.0	0.0	8.0	0.0	3.00	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0
	81	15.00	0.0	0.0	0.0	0.0	0.0	0.0	8.0	0.0	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean		10.12	.0040	.0	.0	.0	.0	.0	1.072	.0	1.880	.0080	.0080	.0040	.0	.0	.0	.0004	.0200
S018																			
	0A	.01	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	.10	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0E	.01	0.0	0.0	0.0	0.0	0.0	0.0	2.00	.10	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0G	.01	0.0	0.0	0.0	0.0	0.0	0.0	1.00	.01	1.00	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0
	01	.01	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2A	.01	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2C	.01	0.0	0.0	0.0	0.0	0.0	0.0	1.00	.01	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2E	.10	0.0	0.0	0.0	0.0	0.0	0.0	3.00	0.0	.50	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0
	2G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.0	2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	21	.01	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4A	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4C	.01	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0
	4G	.01	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	.50	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	41	.01	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	.10	.01	0.0	.50	0.0	0.0	0.0	0.0	0.0
	8A	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	.01	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	.01	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.0	.10	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	81	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	0.0	0.0	0.0	0.0	0.0	0.0	.10	.50	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	81	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	.10	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0
Mean		.0112	.0	0	.0	.0	.0	.0	.4840	.0208	.8820	.0084	.0	.0280	.0	.0	.0	.0008	.0
S02																			
	0A	40.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0C	30.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0E	25.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0G	20.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	01	30.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2A	30.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2C	35.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2E	30.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2G	35.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	21	30.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4A	25.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4C	25.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4E	30.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4G	25.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	41	30.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8A	30.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	25.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	35.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	30.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	81	25.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8A	30.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	30.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	30.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	35.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	81	30.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean		28.80	0	0	.0	.0	.0	.0	.0	.0	1.872	.0	.0	.0	.0	.0	.0	.0	.0
S03																			
	0A	13.00	0.0	0.0	.50	0.0	0.0	0.0	4.00	5.00	12.00	2.00	0.0	1.00	0.0	1.00	0.0	0.0	0.0
	0C	5.00	0.0	0.0	0.0	0.0	0.0	0.0	3.00	5.00	12.00	1.00	.50	2.00	0.0	0.0	0.0	0.0	0.0
	0E	12.00	0.0	0.0	0.0	0.0	0.0	0.0	4.00	5.00	15.00	.50	.50	2.00	0.0	.10	0.0	0.0	0.0
	0G	4.00	.50	0.0	.50	0.0	0.0	0.0	5.00	7.00	15.00	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0
	01	10.00	0.0	0.0	0.0	0.0	.10	0.0	4.00	10.00	15.00	0.0	.10	.10	0.0	0.0	0.0	0.0	0.0
	2A	10.00	0.0	0.0	1.00	0.0	0.0	0.0	3.00	15.00	25.00	2.00	0.0	1.00	0.0	1.00	0.0	0.0	0.0
	2C	15.00	0.0	0.0	.50	0.0	0.0	0.0	3.00	12.00	25.00	2.00	0.0	.50	0.0	0.0	0.0	0.0	0.0
	2E	12.00	0.0	0.0	.10	0.0	0.0	0.0	5.00	10.00	15.00	.10	.10	.10	0.0	0.0	0.0	0.0	0.0
	2G	25.00	0.0	0.0	0.0	0.0	0.0	0.0	3.00	4.00	30.00	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0
	21	10.00	0.0	0.0	0.0	0.0	0.0	0.0	7.00	10.00	10.00	0.0	0.0	.10	0.0	1.00	0.0	0.0	0.0
	4A	5.00	0.0	0.0	.50	0.0	0.0	0.0	3.00	12.00	25.00	2.00	0.0	.50	0.0	.10	0.0	0.0	0.0
	4C	7.00	0.0	0.0	0.0	0.0	0.0	0.0	2.00	10.00	15.00	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0
	4E	15.00	0.0	0.0	0.0	0.0	0.0	0.0	10.00	3.00	35.00	0.0	.50	.50	0.0	0.0	0.0	0.0	0.0
	4G	5.00	0.0	0.0	0.0	0.0	0.0	0.0	15.00	5.00	30.00	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0
	41	15.00	0.0	0.0	0.0	.01	0.0	0.0	.50	15.00	15.00	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0
	8A	12.00	.50	0.0	0.0	0.0	0.0	0.0	5.00	5.00	40.00	2.00	0.0	1.00	0.0	0.0	0.0	0.0	0.0
	8C	15.00	0.0	0.0	0.0	0.0	0.0	0.0	5.00	7.00	20.00	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0
	8E	7.00	0.0	0.0	0.0	0.0	0.0	0.0	7.00	2.00	15.00	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0
	8G	.50	0.0	0.0	0.0	0.0	0.0	0.0	4.00	5.00	10.00	0.0	.10	.50	0.0	0.0	0.0	0.0	0.0
	81	5.00	0.0	0.0	0.0	0.0	0.0	0.0	4.00	2.00	25.00	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0
	8A	5.00	0.0	0.0	0.0	0.0	0.0	0.0	5.00	2.00	25.00	1.00	0.0	.50	0.0	0.0	0.0	0.0	0.0
	8C	7.00	0.0	0.0	0.0	0.0	0.0	0.0	12.00	2.00	25.00	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0
	8E	5.00	0.0	0.0	0.0	0.0	0.0	0.0	.50	4.00	7.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	2.00	0.0	0.0	0.0	0.0	0.0	0.0	3.00	10.00	40.00	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0
	81	5.00	0.0	0.0	.50	0.0	0.0	0.0	5.00	5.00	30.00	.50	1.00	.50	0.0	0.0	0.0	0.0	0.0
Mean		9.300	.0400	.0	.1440	.0	.0044	.0	4.640	7.000	20.44	.8240	.1400	.4720	.0	.1480	.0	0	0
S04																			
	0A	7.00	0.0	0.0	0.0	0.0	0.0	0.0	4.00	3.00	3.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0C	10.00	0.0	0.0	0.0	0.0	0.0	0.0	2.00	2.00	5.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0E	12.00	0.0	0.0	0.0	0.0	0.0	0.0	4.00	0.0	3.00	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0
	0G	5.00	0.0	0.0	0.0	0.0	0.0	0.0	5.00	2.00	4.00	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0
	01	5.00	0.0	0.0	0.0	0.0	0.0	0.0	1.00	.50	2.00	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0
	2A	15.00	0.0	0.0	0.0	0.0	0.0	0.0	5.00	4.00	3.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2C	4.00	0.0	0.0	0.0	0.0	0.0	0.0	10.00	7.00	2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2E	20.00	0.0	0.0	0.0	0.0	0.0	0.0	10.00	4.00	3.00	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0
	2G	5.00	0.0	0.0	0.0	0.0	0.0	0.0	4.00	3.00	7.00	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0
	21	5.00	0.0	0.0	0.0	0.0	0.0	0.0	3.00	3.00	4.00	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0
	4A	10.00	0.0	0.0	0.0	0.0	0.0	0.0	10.00	10.00	1.00	0.0	0.0	1.00	0.0	0.0	0.0	0.0	.50
	4C	5.00	0.0	0.0	0.0	0.0	0.0	0.0	5.00	5.00	2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4E	17.00	0.0	0.0	0.0	0.0	0.0	0.0	7.00	25.00	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4G	4.00	0.0	0.0	0.0	0.0	0.0	0.0	10.00	4.00	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	41	20.00	0.0	0.0	0.0	0.0	0.0	0.0	4.00	10.00	4.00	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Athabasca Oil Sands Geological Monitoring Program
August 1982 Survey of Vascular Plant Communities
in Pinus Banksiana Reference Stands
Species Cover % Values by Sub m Plots

Stand	Plot	PIBA	PIGL	PIMA	POTR	POBA	BEPA	LALA	VAMY	VAVI	ARUV	ROAC	PRPE	AMAL	RUST	LODI	VIED	HUTO	SABB
	8A	8.00	0.0	0.0	0.0	0.0	0.0	0.0	5.00	5.00	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	20.00	0.0	0.0	0.0	0.0	0.0	0.0	4.00	12.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10
	8E	5.00	0.0	0.0	0.0	0.0	0.0	0.0	5.00	7.00	4.00	.10	0.0	.10	0.0	0.0	0.0	0.0	0.0
	8G	10.00	0.0	0.0	0.0	0.0	0.0	0.0	7.00	12.00	10.00	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8I	20.00	0.0	0.0	0.0	0.0	0.0	0.0	5.00	5.00	4.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8A	15.00	0.0	0.0	0.0	0.0	0.0	0.0	4.00	5.00	5.00	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	10.00	0.0	0.0	0.0	0.0	0.0	0.0	7.00	4.00	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	5.00	0.0	0.0	0.0	0.0	0.0	0.0	5.00	7.00	.50	.50	0.0	.50	0.0	0.0	0.0	0.0	1.10
	8G	15.00	0.0	0.0	0.0	0.0	0.0	0.0	10.00	25.00	4.00	1.00	0.0	.10	0.0	0.0	0.0	0.0	0.0
	8I	15.00	0.0	0.0	0.0	0.0	0.0	0.0	10.00	20.00	.50	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0
Mean		10.84	.0	.0	.0	.0	.0	.0	5.600	7.300	2.934	.0930	.0	.1172	.0	.0	.0	.0	.0280
S05																			
	0A	25.00	0.0	0.0	0.0	0.0	0.0	0.0	4.00	2.00	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0
	0C	10.00	0.0	0.0	0.0	0.0	0.0	0.0	3.00	5.00	2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.00
	0E	4.00	0.0	0.0	0.0	0.0	0.0	0.0	4.00	5.00	7.00	.50	0.0	0.0	0.0	0.0	0.0	0.0	3.00
	0G	15.00	0.0	0.0	0.0	0.0	0.0	0.0	5.00	5.00	12.00	.50	.10	.01	0.0	0.0	0.0	0.0	0.0
	0I	30.00	0.0	0.0	0.0	0.0	0.0	0.0	3.00	3.00	3.00	0.0	.10	.10	0.0	0.0	0.0	0.0	.50
	2A	15.00	0.0	0.0	0.0	0.0	0.0	0.0	5.00	4.00	1.00	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0
	2C	15.00	0.0	0.0	0.0	0.0	0.0	0.0	3.00	12.00	2.00	0.0	.01	0.0	0.0	0.0	0.0	0.0	1.00
	2E	30.00	0.0	0.0	0.0	0.0	0.0	0.0	3.00	12.00	3.00	.50	.10	1.00	0.0	0.0	0.0	0.0	1.00
	2G	12.00	0.0	0.0	0.0	0.0	0.0	0.0	7.00	15.00	4.00	1.00	0.0	.50	0.0	0.0	0.0	0.0	0.0
	2I	8.00	0.0	0.0	0.0	0.0	0.0	0.0	5.00	4.00	2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50
	4A	22.00	0.0	0.0	0.0	0.0	0.0	0.0	2.00	5.00	4.00	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0
	4C	20.00	0.0	0.0	0.0	0.0	0.0	0.0	1.00	15.00	10.00	0.0	0.0	.50	0.0	0.0	0.0	0.0	3.00
	4E	25.00	0.0	0.0	0.0	0.0	0.0	0.0	7.00	25.00	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50
	4G	17.00	0.0	0.0	0.0	0.0	0.0	0.0	10.00	25.00	1.00	0.0	.10	.10	0.0	0.0	0.0	0.0	0.0
	4I	17.00	0.0	0.0	0.0	0.0	0.0	0.0	1.00	20.00	3.00	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0
	8A	4.00	0.0	0.0	0.0	0.0	0.0	0.0	4.00	12.00	4.00	0.0	0.0	.01	0.0	0.0	0.0	0.0	.01
	8C	4.00	0.0	0.0	0.0	0.0	0.0	0.0	1.00	4.00	3.00	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0
	8E	4.00	0.0	0.0	0.0	0.0	0.0	0.0	8.00	15.00	.50	0.0	0.0	.50	0.0	0.0	0.0	0.0	.50
	8G	4.00	0.0	0.0	0.0	0.0	0.0	0.0	.50	10.00	1.00	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0
	8I	15.00	0.0	0.0	0.0	0.0	0.0	0.0	3.00	2.00	5.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8A	20.00	0.0	0.0	0.0	0.0	0.0	0.0	3.00	20.00	3.00	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0
	8C	20.00	0.0	0.0	0.0	0.0	0.0	0.0	5.00	10.00	4.00	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0
	8E	25.00	0.0	0.0	0.0	0.0	0.0	0.0	4.00	20.00	.50	0.0	.10	.01	0.0	0.0	0.0	0.0	0.0
	8G	5.00	0.0	0.0	0.0	0.0	0.0	0.0	7.00	10.00	.50	0.0	.10	.10	0.0	0.0	0.0	0.0	0.0
	8I	7.00	0.0	0.0	0.0	0.0	0.0	0.0	5.00	2.00	1.00	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0
Mean		15.24	.0	.0	.0	.0	.0	.0	4.620	10.64	3.184	.1000	.0884	.1172	.0	.0	.0	.0	.4804
S07																			
	0A	12.00	0.0	0.0	0.0	0.0	0.0	0.0	7.00	4.00	5.00	1.00	.10	0.0	0.0	0.0	0.0	0.0	0.0
	0C	15.00	.01	0.0	0.0	0.0	0.0	0.0	5.00	3.00	4.00	.10	.50	0.0	0.0	0.0	0.0	0.0	0.0
	0E	12.00	0.0	0.0	0.0	0.0	0.0	0.0	4.00	3.00	10.00	.50	.50	.10	0.0	0.0	0.0	0.0	0.0
	0G	18.00	0.0	0.0	0.0	0.0	0.0	0.0	4.00	3.00	4.00	.50	0.0	.01	0.0	0.0	0.0	0.0	0.0
	0I	7.00	0.0	0.0	0.0	0.0	0.0	0.0	5.00	3.00	5.00	.50	.01	.10	0.0	0.0	0.0	0.0	0.0
	2A	8.00	0.0	0.0	0.0	0.0	0.0	0.0	5.00	5.00	2.00	3.00	0.0	.10	0.0	0.0	0.0	0.0	0.0
	2C	12.00	0.0	0.0	0.0	0.0	0.0	0.0	10.00	5.00	10.00	3.00	0.0	.50	0.0	0.0	0.0	0.0	0.0
	2E	11.00	0.0	0.0	0.0	0.0	0.0	0.0	5.00	5.00	10.00	2.00	.50	.50	0.0	0.0	0.0	0.0	0.0
	2G	7.00	0.0	0.0	0.0	0.0	0.0	0.0	2.00	1.00	5.00	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2I	10.00	0.0	0.0	0.0	0.0	0.0	0.0	1.00	3.00	3.00	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4A	8.00	0.0	0.0	0.0	0.0	0.0	0.0	5.00	5.00	.10	.50	.01	.10	.10	0.0	0.0	0.0	0.0
	4C	10.00	0.0	0.0	0.0	0.0	0.0	0.0	2.00	3.00	2.00	2.00	.50	.01	.01	0.0	0.0	0.0	0.0
	4E	10.00	0.0	0.0	0.0	0.0	0.0	0.0	4.00	3.00	10.00	3.00	.50	.10	0.0	0.0	0.0	0.0	0.0
	4G	15.00	0.0	0.0	0.0	0.0	0.0	0.0	.50	3.00	1.00	.10	.10	0.0	0.0	0.0	0.0	0.0	0.0
	4I	4.00	0.0	0.0	0.0	0.0	0.0	0.0	3.00	5.00	5.00	.50	.50	0.0	0.0	0.0	0.0	0.0	0.0
	8A	25.00	0.0	0.0	0.0	0.0	0.0	0.0	3.00	5.00	.50	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	30.00	0.0	0.0	0.0	0.0	0.0	0.0	4.00	5.00	5.00	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	25.00	0.0	0.0	0.0	0.0	0.0	0.0	4.00	5.00	2.00	1.00	.10	0.0	0.0	0.0	0.0	0.0	0.0
	8G	15.00	0.0	0.0	0.0	0.0	0.0	0.0	.50	3.00	15.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8I	25.00	0.0	0.0	0.0	0.0	0.0	0.0	5.00	5.00	5.00	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0
	8A	25.00	0.0	0.0	0.0	0.0	0.0	0.0	5.00	5.00	4.00	.50	.10	.10	0.0	0.0	0.0	0.0	0.0
	8C	25.00	0.0	0.0	0.0	0.0	0.0	0.0	2.00	10.00	.50	2.00	.10	0.0	0.0	0.0	0.0	0.0	0.0
	8E	20.00	0.0	0.0	0.0	0.0	0.0	0.0	2.00	1.00	1.00	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	25.00	0.0	0.0	0.0	0.0	0.0	0.0	.10	4.00	3.00	.50	.10	0.0	0.0	0.0	0.0	0.0	0.0
	8I	20.00	0.0	0.0	0.0	0.0	0.0	0.0	2.00	1.00	5.00	0.0	.10	.10	0.0	0.0	.50	0.0	0.0
Mean		15.72	.0004	0	0	0	0	.0	4.004	3.920	4.004	.0480	.1481	.0788	.0044	0	.0200	0	0
S04																			
	0A	5.00	0.0	0.0	0.0	0.0	0.0	0.0	1.00	.50	4.00	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0C	10.00	0.0	0.0	0.0	0.0	0.0	0.0	1.00	1.00	1.00	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0E	3.00	0.0	0.0	0.0	0.0	0.0	0.0	2.00	1.00	4.00	2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0G	4.00	0.0	0.0	0.0	0.0	0.0	0.0	.10	1.00	4.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0I	7.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2A	10.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	4.00	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2C	15.00	0.0	0.0	0.0	0.0	0.0	0.0	1.00	2.00	4.00	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2E	5.00	0.0	0.0	0.0	0.0	0.0	0.0	2.00	.50	2.00	2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2G	2.00	0.0	0.0	0.0	0.0	0.0	0.0	2.00	0.0	2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2I	5.00	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.0	2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4A	5.00	0.0	0.0	0.0	0.0	0.0	0.0	.50	1.00	1.00	.50	1.00	0.0	0.0	0.0	0.0	0.0	0.0
	4C	14.00	0.0	0.0	0.0	0.0	0.0	0.0	3.00	1.00	3.00	.50	.50	0.0	0.0	0.0	0.0	0.0	0.0
	4E	4.00	0.0	0.0	0.0	0.0	0.0	0.0	1.00	.50	2.00	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4G	10.00	0.0	0.0	0.0	0.0	0.0	0.0	.10	.10	2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4I	7.00	0.0	0.0	0.0	0.0	0.0	0.0	.50	.10	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8A	5.00	0.0	0.0	0.0	0.0	0.0	0.0	.50	.10	1.00	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	3.00	0.0	0.0	0.0	0.0	0.0	0.0	2.00	.50	.50	.50	.10	0.0	0.0	0.0	0.0	0.0	0.0
	8E	20.00	0.0	0.0	0.0	.10	0.0	0.0	.50	2.00	.50	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0
	8G	2.00	0.0	0.0	0.0	0.0	0.0	0.0	.10	.10	2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8I	5.00	0.0	0.0	0.0	0.0	0.0	0.0	3.00	2.00	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8A	10.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	7.00	0.0	0.0	0.0	0.0	0.0	0.0	.50	1.00	.50	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	3.00	0.0	0.0	0.0	0.0	0.0	0.0	3.00	.50	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	2.00	0.0	0.0	0.0	0.0	0.0	0.0	1.00	.50	2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8I	17.00	0.0	0.0	0.0	0.0	0.0	0.0	.50	1.00	4.00	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0
Mean		7.040	0	0	.0040	0	0	0	1.052	7380	2.060	.0040	.0720	0	0	0	0	0	0
S09																			
	0A	25.00	0.0	0.0	0.0	0.0	0.0	0.0	1.00	3.00	2.00	2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0C	15.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	3.00	4.00	4.00	0.0	0.0	0.0	0.0	0.0	0.0
	0E	13.00	0.0	0.0	0.0	0.0	0.0	0.0	.50	12.00	10.00	2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0G	15.00	0.0	0.0	0.0	0.0	0.0	0.0	2.00	3.00	0.0	4.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0I	8.00	0.0	1.00	0.0	0.0	0.0	0.0	3.00	3.00	10.00	5.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2A	20.00	0.0	0.0	0.0	0.0	0.0	0.0	4.00	3.00	0.0	2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2C	10.00	0.0	0.0	0.0	0.0	0.0	0.0	7.00	5.00	10.00	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2E	5.00	0.0	0.0	0.0	0.0	0.0	0.0	1.00	3.00	5.00	1.00	0.0	0.0	0.0	.10	0.0	0.0	0.0

Athabasca Oil Sands Ecological Monitoring Program
August 1983 Survey of Vascular Plant Communities
in Pinus Banksiana Reference Stands
Species Cover % Values by Sub m Plots

Stand	Plot	PIBA	PIGL	PIMA	POTR	POBA	BEPA	LALA	VAMY	VAVI	ARUV	ROAC	PRPE	AMAL	RUST	LODI	VIED	NUTG	RARE
	2C	2.00	0.0	0.0	0.0	0.0	0.0	0.0	4.00	5.00	5.00	3.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2I	10.00	0.0	0.0	0.0	0.0	0.0	0.0	10.00	5.00	5.00	3.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4A	5.00	0.0	0.0	0.0	0.0	0.0	0.0	3.00	3.00	.10	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4C	15.00	2.00	0.0	0.0	0.0	0.0	0.0	3.00	10.00	4.00	2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4E	15.00	0.0	0.0	0.0	0.0	0.0	0.0	3.00	5.00	4.00	4.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4G	15.00	0.0	0.0	0.0	0.0	0.0	0.0	3.00	5.00	4.00	4.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4I	20.00	0.0	0.0	0.0	0.0	0.0	0.0	3.00	15.00	5.00	5.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6A	20.00	0.0	0.0	0.0	0.0	0.0	0.0	.50	5.00	3.00	4.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6C	20.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	15.00	3.00	5.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6E	15.00	0.0	0.0	0.0	0.0	0.0	0.0	3.00	7.00	5.00	5.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6G	15.00	0.0	0.0	.10	0.0	0.0	0.0	.10	3.00	5.00	4.00	0.0	0.0	0.0	0.0	0.0	0.0	.50
	6I	7.00	0.0	0.0	0.0	0.0	0.0	0.0	.50	7.00	3.00	10.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8A	3.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.00	3.00	5.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	4.00	0.0	0.0	.10	0.0	0.0	0.0	0.0	5.00	15.00	4.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	30.00	0.0	0.0	.10	0.0	0.0	0.0	.50	20.00	2.00	4.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	7.00	0.0	0.0	0.0	0.0	0.0	0.0	.10	15.00	12.00	3.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8I	3.00	0.0	0.0	.10	0.0	0.0	0.0	.50	15.00	10.00	3.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean		12.72	.0200	.0400	.0150	.0	.0	.0	1.948	7.800	5.444	3.550	.0	.0	.0	.0040	.0	.0	.0200
S10																			
	0A	10.00	0.0	0.0	0.0	0.0	0.0	0.0	3.00	4.00	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0C	13.00	0.0	0.0	0.0	0.0	0.0	0.0	.10	12.00	4.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0E	5.00	0.0	0.0	0.0	0.0	0.0	0.0	4.00	20.00	4.00	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0
	0G	5.00	0.0	0.0	0.0	0.0	0.0	0.0	4.00	13.00	3.00	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0
	0I	12.00	0.0	0.0	0.0	0.0	0.0	0.0	4.00	15.00	10.00	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0
	2A	5.00	0.0	0.0	0.0	0.0	0.0	0.0	4.00	5.00	3.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2C	4.00	0.0	0.0	0.0	0.0	0.0	0.0	7.00	12.00	3.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2E	15.00	0.0	0.0	0.0	0.0	0.0	0.0	.50	5.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2G	5.00	0.0	0.0	0.0	.10	0.0	0.0	2.00	5.00	3.00	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0
	2I	17.00	0.0	0.0	0.0	0.0	0.0	0.0	3.00	.50	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4A	17.00	0.0	0.0	0.0	0.0	0.0	0.0	.10	10.00	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4C	20.00	0.0	0.0	0.0	0.0	0.0	0.0	1.00	15.00	3.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4E	5.00	0.0	0.0	0.0	0.0	0.0	0.0	7.00	4.00	5.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4G	3.00	0.0	0.0	0.0	0.0	0.0	0.0	3.00	3.00	4.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4I	7.00	0.0	0.0	0.0	0.0	0.0	0.0	15.00	4.00	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6A	5.00	0.0	0.0	0.0	0.0	0.0	0.0	5.00	2.00	12.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6C	20.00	0.0	0.0	0.0	0.0	0.0	0.0	1.00	7.00	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6E	30.00	0.0	0.0	0.0	0.0	0.0	0.0	.10	7.00	4.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6G	2.00	0.0	0.0	0.0	0.0	0.0	0.0	10.00	4.00	2.00	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0
	6I	30.00	0.0	0.0	0.0	0.0	0.0	0.0	1.00	1.00	3.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8A	5.00	0.0	0.0	0.0	0.0	0.0	0.0	5.00	12.00	13.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	10.00	0.0	0.0	0.0	0.0	0.0	0.0	5.00	4.00	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	5.00	0.0	0.0	0.0	0.0	0.0	0.0	.50	5.00	3.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	5.00	0.0	0.0	0.0	0.0	0.0	0.0	3.00	4.00	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8I	.50	0.0	0.0	0.0	0.0	0.0	0.0	20.00	0.0	12.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean		8.930	.0	.0	.0	.0040	0	0	4.282	7.140	3.760	.0	.0184	.0	.0	.0	.0	.0	0
S119																			
	0A	.01	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0C	.01	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	3.00	0.0	.01	0.0	0.0	0.0	0.0	0.0
	0E	.01	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	.01	1.00	.50	0.0	0.0	0.0	0.0	0.0	0.0
	0G	.10	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0
	0I	.10	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0
	2A	.10	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	1.00	.01	0.0	0.0	0.0	0.0	0.0	0.0
	2C	.01	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	3.00	1.00	0.0	0.0	0.0	0.0	0.0	0.0
	2E	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	4.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2G	.10	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	.01	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2I	.01	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	.01	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0
	4A	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	.50	0.0	0.0	0.0	0.0	0.0	0.0
	4C	.01	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	.10	2.00	1.00	.01	0.0	0.0	0.0	0.0	0.0
	4E	.01	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4G	.01	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	1.00	0.0	.01	0.0	0.0	0.0	0.0	0.0
	4I	.01	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	1.00	0.0	.01	0.0	0.0	0.0	0.0	0.0
	6A	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.00	.50	0.0	0.0	0.0	0.0	0.0	0.0
	6C	.01	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	3.00	.01	0.0	0.0	0.0	0.0	0.0	0.0
	6E	.01	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	3.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6G	.01	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6I	.10	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	.10	.50	0.0	.01	0.0	0.0	0.0	0.0	0.0
	8A	.50	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.00	1.00	0.0	0.0	0.0	0.0	0.0	0.0
	8E	.10	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	3.00	1.00	0.0	0.0	0.0	0.0	0.0	0.0
	8G	.10	0.0	0.0	0.0	0.0	0.0	0.0	2.00	0.0	.10	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0
	8I	.10	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	.01	.50	.01	0.0	0.0	0.0	0.0	0.0	0.0
Mean		.0852	.0	.0	.0	0	0	.0	.3540	0	.0178	1.334	.2352	.0032	0	.0	0	0	0
S12																			
	0A	10.00	0.0	0.0	0.0	0.0	0.0	0.0	4.00	10.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0C	5.00	0.0	0.0	0.0	0.0	0.0	0.0	3.00	5.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0E	15.00	0.0	0.0	0.0	0.0	0.0	0.0	10.00	10.00	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0
	0G	7.00	0.0	0.0	0.0	0.0	0.0	0.0	5.00	4.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0I	10.00	0.0	0.0	0.0	0.0	0.0	0.0	4.00	3.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2A	15.00	0.0	0.0	0.0	0.0	0.0	0.0	.50	5.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2C	25.00	0.0	0.0	0.0	0.0	0.0	0.0	.50	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2E	12.00	0.0	0.0	0.0	0.0	0.0	0.0	4.00	12.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2G	5.00	0.0	0.0	0.0	0.0	0.0	0.0	5.00	3.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2I	20.00	0.0	0.0	0.0	0.0	0.0	0.0	4.00	2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4A	12.00	0.0	0.0	0.0	0.0	0.0	0.0	3.00	15.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4C	20.00	0.0	0.0	0.0	0.0	0.0	0.0	1.00	2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4E	15.00	0.0	0.0	0.0	0.0	0.0	0.0	20.00	35.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4G	15.00	0.0	0.0	0.0	0.0	0.0	0.0	15.00	15.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4I	20.00	0.0	0.0	0.0	0.0	0.0	0.0	15.00	30.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6A	25.00	0.0	0.0	0.0	0.0	0.0	0.0	.50	5.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6C	10.00	0.0	0.0	0.0	0.0	0.0	0.0	5.00	20.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6E	30.00	0.0	0.0	0.0	0.0	0.0	0.0	3.00	20.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6G	20.00	0.0	0.0	0.0	0.0	0.0	0.0	4.00	25.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6I	10.00	0.0	0.0	0.0	0.0	0.0	0.0	1.00	15.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8A	20.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	7.00	0.0	0.0	0.0	0.0	0.0	0.0	1.00	4.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	20.00	0.0	0.0	0.0	0.0	0.0	0.0	4.00	20.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	4.00	0.0	0.0	0.0	0.0	0.0	0.0	7.00	25.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8I	15.00	0.0	0.0	0.0	0.0	0.0	0.0	10.00	20.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean		14.58	0	.0	.0	.0	0	.0	5.480	11.88	.0	0	.0	.0004	.0	.0	0	.0	0
S14																			
	0A	5.00	0.0	0.0	0.0	0.0	0.0	0.0	7.00	15.00	10.00	0.0	0.0	10	0.0	0.0	0.0	0.0	0.0

Athabasca Oil Sands Ecological Monitoring Program
August 1983 Survey of Vascular Plant Communities
in Pinus Banksiana Reference Stands
Species Cover % Values By Sub m Plots

Stand	Plot	PIBA	PIBL	PIMA	POTR	POBA	BEPA	LALA	VAMY	VAVI	ARUV	RBAC	PRPE	AMAL	RUST	LOBI	VIED	HUTU	SASS
	0C	5.00	0.0	0.0	0.0	0.0	0.0	0.0	2.00	2.00	30.00	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0
	0E	5.00	0.0	0.0	0.0	0.0	0.0	0.0	4.00	7.00	20.00	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0
	0G	4.00	0.0	0.0	0.0	0.0	0.0	0.0	5.00	10.00	17.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0I	.50	0.0	0.0	0.0	0.0	0.0	0.0	2.00	15.00	15.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	3A	4.00	0.0	0.0	0.0	0.0	0.0	0.0	7.00	5.00	12.00	0.0	0.0	1.00	0.0	0.0	0.0	0.0	0.0
	3C	11.00	0.0	0.0	0.0	0.0	0.0	0.0	4.00	3.00	20.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	3E	3.00	0.0	0.0	0.0	0.0	0.0	0.0	5.00	3.00	15.00	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0
	3G	4.00	0.0	0.0	0.0	0.0	0.0	0.0	15.00	0.0	13.00	0.0	0.0	1.00	0.0	0.0	0.0	0.0	0.0
	4I	19.00	0.0	0.0	0.0	0.0	0.0	0.0	7.00	4.00	10.00	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0
	4A	11.00	0.0	0.0	0.0	0.0	0.0	0.0	2.00	3.00	5.00	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0
	4C	13.00	0.0	0.0	0.0	0.0	0.0	0.0	4.00	2.00	7.00	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0
	4E	.01	0.0	0.0	0.0	0.0	0.0	0.0	5.00	2.00	25.00	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0
	4G	1.00	0.0	0.0	0.0	0.0	0.0	0.0	4.00	7.00	30.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4I	3.00	0.0	0.0	0.0	0.0	0.0	0.0	4.00	3.00	30.00	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0
	5A	15.00	0.0	0.0	0.0	0.0	0.0	0.0	3.00	3.00	15.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	5C	13.00	0.0	0.0	0.0	0.0	0.0	0.0	3.00	3.00	25.00	.10	0.0	.50	0.0	0.0	0.0	0.0	0.0
	5E	10.00	0.0	0.0	0.0	0.0	0.0	0.0	3.00	3.00	30.00	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0
	5G	15.00	0.0	0.0	0.0	0.0	0.0	0.0	3.00	3.00	30.00	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0
	5I	3.00	0.0	0.0	0.0	0.0	0.0	0.0	1.00	2.00	30.00	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0
	6A	30.00	0.0	0.0	0.0	0.0	0.0	0.0	5.00	10.00	25.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6C	15.00	0.0	0.0	0.0	0.0	0.0	0.0	3.00	3.00	35.00	.10	0.0	.50	0.0	0.0	0.0	0.0	0.0
	6E	1.00	0.0	0.0	0.0	0.0	0.0	0.0	.50	1.00	30.00	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0
	6G	15.00	0.0	0.0	0.0	0.0	0.0	0.0	3.00	3.00	35.00	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0
	6I	.50	0.0	0.0	0.0	0.0	0.0	0.0	3.00	2.00	15.00	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0
Mean		5.000	.0	.0	0	0	.0	0	4.430	4.770	17.70	0000	0	.3884	0	0	0	0	0
S15																			
	0A	30.00	0.0	.50	0.0	0.0	0.0	0.0	1.00	0.0	1.00	2.00	0.0	0.0	0.0	0.0	0.0	0.0	3.00
	0C	15.00	0.0	1.00	0.0	0.0	0.0	0.0	1.00	0.0	4.00	2.00	0.0	0.0	0.0	0.0	0.0	0.0	3.00
	0E	20.00	.50	2.00	0.0	0.0	0.0	0.0	.50	0.0	2.00	2.00	0.0	0.0	0.0	0.0	0.0	0.0	3.00
	0G	30.00	.50	3.00	0.0	0.0	0.0	0.0	2.00	0.0	1.00	2.00	0.0	0.0	0.0	0.0	0.0	0.0	3.00
	0I	7.00	2.00	1.00	0.0	0.0	0.0	0.0	3.00	0.0	0.0	2.00	0.0	0.0	0.0	0.0	0.0	0.0	3.00
	3A	15.00	0.0	1.00	0.0	0.0	0.0	0.0	3.00	0.0	1.00	2.00	0.0	0.0	0.0	0.0	0.0	0.0	3.00
	3C	30.00	1.00	0.0	0.0	0.0	0.0	0.0	3.00	.50	1.00	2.00	0.0	0.0	0.0	0.0	0.0	0.0	3.00
	3E	15.00	0.0	2.00	0.0	0.0	0.0	0.0	1.00	.50	1.00	2.00	0.0	0.0	0.0	0.0	0.0	0.0	3.00
	3G	2.00	0.0	2.00	0.0	0.0	0.0	0.0	2.00	.50	2.00	2.00	0.0	0.0	0.0	0.0	0.0	0.0	3.00
	3I	10.00	2.00	0.0	0.0	0.0	0.0	0.0	2.00	.50	2.00	2.00	0.0	0.0	0.0	0.0	0.0	0.0	3.00
	4A	.50	0.0	4.00	0.0	0.0	0.0	0.0	2.00	.50	4.00	2.00	0.0	0.0	0.0	0.0	0.0	0.0	1.00
	4C	12.00	0.0	4.00	0.0	0.0	0.0	0.0	4.00	.50	2.00	2.00	0.0	0.0	0.0	0.0	0.0	0.0	1.00
	4E	15.00	0.0	0.0	0.0	0.0	0.0	0.0	3.00	10.00	2.00	2.00	0.0	0.0	0.0	0.0	0.0	0.0	1.00
	4G	35.00	0.0	4.00	0.0	0.0	0.0	0.0	4.00	1.00	0.0	7.00	0.0	0.0	0.0	0.0	0.0	0.0	3.00
	4I	.5 00	0.0	3.00	0.0	0.0	0.0	0.0	3.00	1.00	0.0	4.00	0.0	0.0	0.0	0.0	0.0	0.0	3.00
	5A	15.00	0.0	5.00	0.0	0.0	0.0	0.0	4.00	1.00	0.0	4.00	0.0	0.0	0.0	0.0	0.0	0.0	3.00
	5C	25.00	0.0	5.00	0.0	0.0	0.0	0.0	3.00	1.00	0.0	4.00	0.0	0.0	0.0	0.0	0.0	0.0	3.00
	5E	7.00	0.0	5.00	0.0	0.0	0.0	0.0	4.00	1.00	0.0	7.00	0.0	0.0	0.0	0.0	0.0	0.0	1.00
	5G	15.00	0.0	1.00	0.0	0.0	0.0	0.0	3.00	2.00	.10	4.00	0.0	0.0	0.0	0.0	0.0	0.0	3.00
	5I	10.00	0.0	2.00	0.0	0.0	0.0	0.0	3.00	1.00	0.0	4.00	0.0	0.0	0.0	0.0	0.0	0.0	3.00
	6A	15.00	0.0	0.0	0.0	0.0	0.0	0.0	3.00	1.00	0.0	4.00	.50	0.0	0.0	0.0	0.0	0.0	1.00
	6C	10.00	0.0	.50	.10	0.0	0.0	0.0	4.00	2.00	2.00	4.00	0.0	0.0	0.0	0.0	0.0	0.0	1.00
	6E	25.00	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.0	.10	3.00	0.0	0.0	0.0	0.0	0.0	0.0	1.00
	6G	15.00	0.0	.50	0.0	0.0	0.0	0.0	3.00	5.00	0.0	5.00	0.0	0.0	0.0	0.0	0.0	0.0	1.00
	6I	10.00	0.0	0.0	0.0	0.0	0.0	0.0	3.00	3.00	0.0	4.00	0.0	0.0	0.0	0.0	0.0	0.0	1.00
Mean		14.60	.2400	2.100	.0040	.0	0	0	2.850	1.090	1.220	3.780	0	.0300	0	0	0	0	1.720
S16																			
	0A	13.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.00	.50	0.0	0.0	1.00	0.0	0.0	0.0	0.0	0.0
	0C	.7.00	1.00	0.0	.10	0.0	0.0	0.0	0.0	10.00	3.00	0.0	0.0	4.00	0.0	0.0	0.0	0.0	1.00
	0E	17.00	0.0	3.00	.01	0.0	0.0	0.0	0.0	3.00	3.00	0.0	0.0	4.00	0.0	0.0	0.0	0.0	1.00
	0G	.5.00	0.0	.50	0.0	0.0	0.0	0.0	0.0	3.00	1.00	0.0	0.0	4.00	0.0	0.0	0.0	0.0	1.00
	0I	17.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.00	1.00	.50	0.0	4.00	0.0	0.0	0.0	0.0	1.00
	3A	15.00	0.0	0.0	.01	0.0	0.0	0.0	0.0	3.00	1.00	0.0	0.0	4.00	0.0	0.0	0.0	0.0	1.00
	3C	15.00	0.0	.50	0.0	0.0	0.0	0.0	0.0	3.00	1.00	0.0	0.0	1.00	0.0	0.0	0.0	0.0	2.00
	3E	20.00	1.00	.50	0.0	0.0	0.0	0.0	0.0	3.00	1.00	0.0	0.0	2.00	0.0	0.0	0.0	0.0	3.00
	3G	4.00	0.0	4.00	.10	0.0	0.0	0.0	0.0	3.00	1.00	0.0	0.0	3.00	0.0	0.0	2.00	0.0	3.00
	3I	15.00	0.0	5.00	.10	0.0	0.0	0.0	0.0	3.00	1.00	1.00	0.0	3.00	0.0	0.0	2.00	0.0	3.00
	4A	4.00	1.00	3.00	.50	0.0	0.0	0.0	0.0	3.00	1.00	0.0	0.0	1.00	0.0	0.0	2.00	0.0	2.00
	4C	10.00	1.00	0.0	0.0	0.0	0.0	0.0	0.0	3.00	1.00	0.0	0.0	2.00	0.0	0.0	2.00	0.0	2.00
	4E	15.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.00	1.00	0.0	0.0	2.00	0.0	0.0	2.00	0.0	2.00
	4G	30.00	0.0	2.00	0.0	0.0	0.0	0.0	0.0	3.00	1.00	0.0	0.0	4.00	0.0	0.0	2.00	0.0	2.00
	4I	30.00	0.0	1.00	0.0	0.0	0.0	0.0	0.0	4.00	1.00	0.0	0.0	4.00	0.0	0.0	2.00	0.0	1.00
	5A	20.00	0.0	.10	.10	0.0	0.0	0.0	0.0	4.00	1.00	0.0	0.0	4.00	0.0	0.0	0.0	0.0	1.00
	5C	15.00	0.0	.50	0.0	0.0	0.0	0.0	0.0	3.00	1.00	0.0	0.0	2.00	0.0	0.0	2.00	0.0	0.0
	5E	2.00	0.0	0.0	.50	0.0	0.0	0.0	0.0	3.00	1.00	0.0	0.0	2.00	0.0	.50	0.0	0.0	.10
	5G	15.00	0.0	0.0	.01	0.0	0.0	0.0	0.0	3.00	1.00	0.0	0.0	3.00	0.0	0.0	0.0	0.0	.10
	5I	15.00	0.0	1.00	.10	0.0	0.0	0.0	0.0	2.00	1.00	0.0	0.0	3.00	0.0	0.0	0.0	0.0	.10
	6A	10.00	0.0	0.0	.50	0.0	0.0	0.0	.10	.50	.50	2.00	0.0	3.00	0.0	0.0	0.0	0.0	.10
	6C	10.00	0.0	3.00	.50	0.0	0.0	0.0	0.0	3.00	2.00	.10	0.0	1.00	0.0	0.0	0.0	0.0	.10
	6E	12.00	0.0	.10	0.0	0.0	0.0	0.0	0.0	1.00	10.00	0.0	0.0	1.00	0.0	0.0	0.0	0.0	.10
	6G	15.00	0.0	1.00	.50	0.0	0.0	0.0	0.0	4.00	10.00	1.00	0.0	1.00	0.0	0.0	0.0	0.0	0.0
	6I	30.00	0.0	5.00	.10	0.0	0.0	0.0	0.0	3.00	3.00	0.0	0.0	2.00	0.0	0.0	0.0	0.0	.10
Mean		14.33	1000	1.330	1412	0000	0	0000	0.100	4.330	3340	1.030	0	2	0	0	1000	0	6300

TRANSPACE REQUIRES 1300 BYTES
13 TRANSFORMATIONS
15 RECODE VALUES - LAS VARIABLES
131 IF/COMPUTE OPERATIONS

CPU TIME REQUIRED. 1.40 SECONDS

```
                    05 REPORT          FORMAT = NOSPACE(1) BREAKSPACE(0) PTSPACE(0) LIST    /
                    06                 VARIABLES = PLOTNO'Plot'(0) ALSO TO 3000 (0)         /
                    07                 HEAD = 'Athabasca Oil Sands Ecological Monitoring Program
                    08                 'August 1983 Survey of Vascular Plant Communities
                    09                 'in Pinus Banksiana Reference Stands
                    70                 'Species Cover % Values By Sub m Plots'              /
                    71                 BREAK = SUBFILE 'Stand' (0)                          /
                    72                 SUMMARY = MEAN 'Mean'

REPORT REQUIRES     3060 BYTES PER THIS TABLE
```

Atmospheric Oil Sands Ecological Monitoring Program
August 1983 Survey of Vascular Plant Communities
in Pinus Banksiana Reference Stands
Species Cover % Values By 5x5 m Plots

Stand	Plot	ALCR	LEGR	SAPS	STAL	SSPU	SASC	SHCA	SASP	VACA	SAMY	HACA	ABLA	AMMU	SABB	HELI	LIBB	CARB	SSSE
S010	04	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	10	10	10	10	0 0	50	01	50
	0C	2 00	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	10	50	01	10	0 0	10	01	50
	0E	50 00	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	1 00	0	0	0	0 0	1 00	0	0
	06	0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	01	10	01	0	0 0	0	01	1 00
	01	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	10	50	01	01	0 0	1 00	01	10
	2A	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	50	10	01	10	0 0	10	0	50
	2C	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	10	50	10	10	0 0	10	0	50
	2E	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	10	10	01	10	0 0	0	0	50
	3E	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	10	10	01	01	0 0	0	01	10
	31	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	10	10	01	01	0 0	0	0	10
	4A	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	1 00	10	01	50	0 0	50	01	10
	4C	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	01	10	01	0	0 0	10	01	50
	4E	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	10	01	10	0	0 0	0	01	50
	41	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	01	10	01	10	0 0	10	01	10
	5A	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	10	10	01	0	0 0	50	01	1 00
	5C	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0	10	0	10	0 0	50	0	10
	5E	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0	01	0	0	0 0	0	0	10
	05	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0	01	0	0	0 0	0	0	01
	61	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0	0	0	0	0 0	0	0	50
	6A	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	01	10	0	0	0 0	0	0	10
	6C	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	10	0	0	0	0 0	0	0	10
	6E	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0	0	0	0	0 0	0	0	0
	07	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0	10	0	0	0 0	0	0	50
Mean		2 000	0	0	0	0	0	0	0	0	0	1494	1338	0268	0058	0	2240	0048	3304
S020	04	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	50	0 0	01	01	0 0	50	0 0	0 0
	0C	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	50	0 0	0 0	01	0 0	0	0 0	0 0
	0E	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0	0 0	0 0	0	0 0	0	0 0	0 0
	06	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	1	0 0	0 0	0	0 0	0	0 0	0 0
	01	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	50	0 0	0 0	0	0 0	0	0 0	01
	2A	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	10	50	0 0	0	0 0	0	0 0	10
	2C	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0	0 0	0 0	0	0 0	0	0 0	10
	2E	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0	0 0	0 0	0	0 0	0	0 0	0 0
	3E	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0	0 0	0 0	0	0 0	0	0 0	0 0
	31	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	10	0 0	0 0	0	0 0	0	0 0	0 0
	4A	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0	0 0	0 0	0	0 0	0	0 0	0 0
	4C	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0	10	0 0	0	0 0	0	0 0	0 0
	4E	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0	0 0	0 0	0	0 0	0	0 0	0 0
	41	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0	0 0	0 0	0	0 0	0	0 0	0 0
	5A	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	50	0 0	0 0	0	0 0	0	0 0	0 0
	5C	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0	0 0	0 0	0	0 0	0	0 0	0 0
	5E	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	10	0 0	0 0	0	0 0	0	0 0	0 0
	05	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0	0 0	0 0	0	0 0	0	0 0	0 0
	61	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	01	0 0	0 0	0	0 0	0	0 0	0 0
	6A	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	10	0 0	0 0	0	0 0	10	0 0	0 0
	6C	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	10	0 0	0 0	0	0 0	10	0 0	0 0
	6E	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0	0 0	0 0	0	0 0	0	0 0	0 0
	07	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0	0 0	0 0	0	0 0	0	0 0	01
Mean		0	0	0	0	0	0	0	0	0	0	3284	0344	0084	0058	0	0630	0008	0052
S030	04	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	1 00	0 0	0 0	0 0	0 0	0 0	01	50
	0C	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	10	0 0	0 0	0 0	0 0	0 0	01	10
	0E	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0	0 0	0 0	0 0	0 0	0 0	01	10
	06	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	1 00	0 0	0 0	0 0	0 0	0 0	01	50
	01	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	50	0 0	0 0	0 0	0 0	0 0	01	10
	2A	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	10	0 0	0 0	0 0	0 0	0 0	01	10
	2C	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	50	0 0	0 0	0 0	0 0	0 0	01	10
	2E	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	10	0 0	0 0	0 0	0 0	0 0	01	01
	3E	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	50	0 0	0 0	0 0	0 0	0 0	01	10
	31	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	50	0 0	0 0	0 0	0 0	0 0	01	10
	4A	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	10	0 0	0 0	0 0	0 0	0 0	01	10
	4C	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	01	0 0	0 0	0 0	0 0	0 0	01	10
	4E	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	01	0 0	0 0	0 0	0 0	0 0	01	01
	41	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	1 00	0 0	0 0	0 0	0 0	0 0	01	50
	5A	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	10	0 0	0 0	0 0	0 0	0 0	01	10
	5C	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	10	0 0	0 0	0 0	0 0	0 0	01	10
	5E	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	10	0 0	0 0	0 0	0 0	0 0	01	10
	05	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	50	0 0	0 0	0 0	0 0	0 0	01	10
	61	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	10	0 0	0 0	0 0	0 0	0 0	01	10
	6A	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	01	0 0	0 0	0 0	0 0	0 0	01	50
Mean		0	0	0	0	0	0	0	0000	0	0	2210	0330	0040	0	0	0040	0072	1048
S040	04	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	10	0 0	0 0	0 0	0 0	0 0	01	10
	0C	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	50	0 0	0 0	0 0	0 0	0 0	01	50
	0E	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0	0 0	0 0	0 0	0 0	0 0	01	10
	06	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	1 00	0 0	0 0	0 0	0 0	0 0	01	10
	01	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	50	0 0	0 0	0 0	0 0	0 0	01	10
	2A	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	10	0 0	0 0	0 0	0 0	0 0	01	10
	2C	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	50	0 0	0 0	0 0	0 0	0 0	01	10
	2E	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	10	0 0	0 0	0 0	0 0	0 0	01	10
	3E	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	50	0 0	0 0	0 0	0 0	0 0	01	10
	31	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	50	0 0	0 0	0 0	0 0	0 0	01	10
	4A	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	50	0 0	0 0	0 0	50	0 0	01	10
	4C	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	10	0 0	0 0	0 0	10	0 0	01	10
	4E	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	50	0 0	0 0	0 0	0 0	0 0	01	10
	41	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	1 00	0 0	0 0	0 0	0 0	0 0	01	10
	5A	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	1 00	0 0	0 0	0 0	0 0	0 0	01	10
	5C	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	10	0 0	0 0	0 0	0 0	0 0	01	10
	5E	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	1 00	0 0	0 0	0 0	0 0	0 0	01	10
	05	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	1 00	0 0	0 0	0 0	0 0	0 0	01	10
	61	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	1 00	0 0	0 0	0 0	0 0	0 0	01	10
	6A	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	3 00	0 0	0 0	0 0	0 0	0 0	01	10
	6C	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	01	0 0	10	0 0	0 0	0 0	01	01

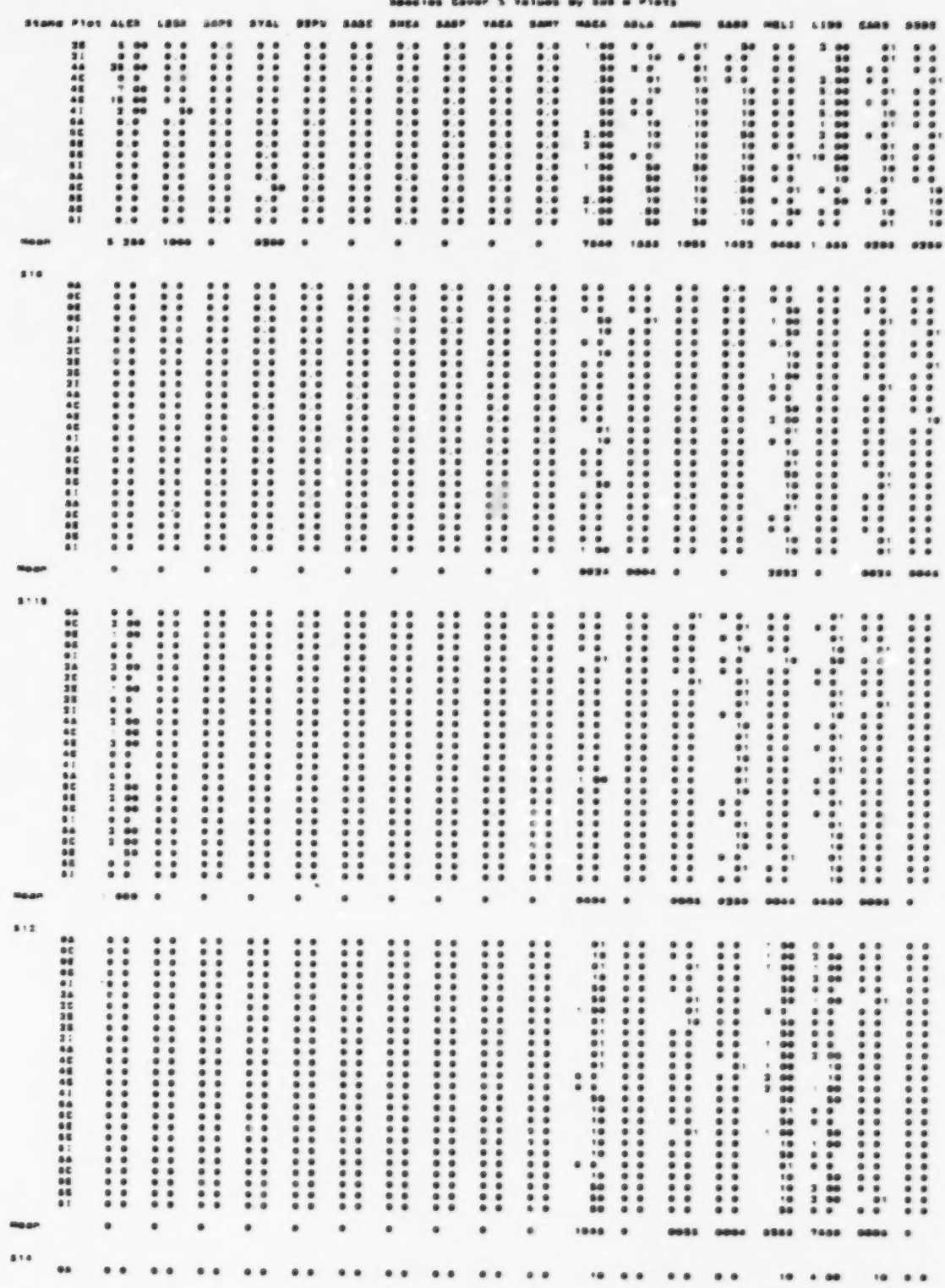
Athabasca Oil Sands Geological Monitoring Program
August 1992 Survey of Vascular Plant Communities
in Pinus Banksiana Reference Stands
Species Cover % Values By Sub @ Plots

Stand	Plot	ALCR	LEGR	SAPS	SYAL	DRPU	SASC	SHCA	SASP	VACA	SAMY	MACA	ASLA	ARNU	SABB	WELI	LIBO	CAAS	BOBE
	00	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	01	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	05	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	01	0 0	0 0	0 0	0 01	0 0	01	10
	01	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	01	10	0 0	0 0	0 0	0 0	01	50
Mean		0	0	0	0	0	0	0	0	0	0	0004	0004	0005	0	0330	0	0003	1100
5018																			
	00	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	10	10	0 0	01	0 0	01	10	10
	05	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	50	50	0 0	50	0 0	10	50	10
	06	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	50	1 00	0 0	1 00	0 0	1 00	10	10
	08	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	01	50	0 0	50	0 0	10	10	10
	01	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	01	50	0 0	50	0 0	10	10	01
	2A	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	01	50	0 0	50	0 0	10	10	01
	2C	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	01	50	0 0	50	0 0	10	10	10
	2E	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	1 00	50	0 0	2 00	0 0	10	10	0
	2B	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	01	50	0 0	50	0 0	10	10	10
	21	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	01	50	0 0	50	0 0	10	10	10
	4A	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	01	10	0 0	10	0 0	10	10	10
	4C	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	01	10	0 0	10	0 0	10	10	10
	4E	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	01	10	0 0	10	0 0	10	10	10
	41	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	01	10	0 0	10	0 0	10	10	10
	6A	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	01	10	0 0	10	0 0	10	10	10
	6C	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	01	10	0 0	10	0 0	10	10	10
	6E	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	01	10	0 0	10	0 0	10	10	10
	61	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	01	10	0 0	10	0 0	10	10	10
	8A	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	01	10	0 0	10	0 0	10	10	10
	8C	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	01	10	0 0	10	0 0	10	10	10
	8E	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	01	10	0 0	10	0 0	10	10	10
	81	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	01	10	0 0	10	0 0	10	10	10
	AA	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	01	10	0 0	10	0 0	10	10	10
	AC	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	01	10	0 0	10	0 0	10	10	10
	AE	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	01	10	0 0	10	0 0	10	10	10
	A1	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	01	10	0 0	10	0 0	10	10	10
	BA	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	01	10	0 0	10	0 0	10	10	10
	BC	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	01	10	0 0	10	0 0	10	10	10
	BE	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	01	10	0 0	10	0 0	10	10	10
	B1	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	10	50	0 0	10	0 0	10	01	10
Mean		0	0	0	0	0	0	0	0	0	0	1700	2300	0002	2312	0	0003	1333	1130
502																			
	00	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	0C	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	0E	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	01	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 01	0 0	0 0	0 0	0 0	0 0	0 01	0 0
	2A	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	2C	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	2E	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	2B	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	21	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	4A	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	4C	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	4E	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	41	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	6A	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	6C	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	6E	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	61	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	8A	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	8C	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	8E	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	81	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	AA	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	AC	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	AE	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	A1	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	B0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	B1	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
Mean		0	0	0	0	0	0	0	0	0	0	0004	0	0	0	0	0004	0004	0012
503																			
	00	2 00	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	3 00	0 0	0 0	0 0	0 0	3 00	0 0	0 0
	0C	2 00	1 00	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	3 00	0 0	0 0	0 0	0 0	3 00	0 0	0 0
	0E	2 00	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	3 00	0 0	0 0	0 0	0 0	3 00	0 0	0 0
	01	3 00	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	3 00	0 0	0 0	0 0	0 0	3 00	0 0	0 0
	2A	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	3 00	0 0	0 0	0 0	0 0	3 00	0 0	0 0
	2C	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	3 00	0 0	0 0	0 0	0 0	3 00	0 0	0 0
	2E	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	3 00	0 0	0 0	0 0	0 0	3 00	0 0	0 0
	2B	3 00	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	3 00	0 0	0 0	0 0	0 0	3 00	0 0	0 0
	21	2 00	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	3 00	0 0	0 0	0 0	0 0	3 00	0 0	0 0
	4A	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	3 00	0 0	0 0	0 0	0 0	3 00	0 0	0 0
	4C	1 00	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	3 00	0 0	0 0	0 0	0 0	3 00	0 0	0 0
	4E	3 00	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	3 00	0 0	0 0	0 0	0 0	3 00	0 0	0 0
	41	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	3 00	0 0	0 0	0 0	0 0	3 00	0 0	0 0
	6A	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	3 00	0 0	0 0	0 0	0 0	3 00	0 0	0 0
	6C	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	3 00	0 0	0 0	0 0	0 0	3 00	0 0	0 0
	6E	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	3 00	0 0	0 0	0 0	0 0	3 00	0 0	0 0
	61	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	3 00	0 0	0 0	0 0	0 0	3 00	0 0	0 0
	8A	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	3 00	0 0	0 0	0 0	0 0	3 00	0 0	0 0
	8C	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	3 00	0 0	0 0	0 0	0 0	3 00	0 0	0 0
	8E	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	3 00	0 0	0 0	0 0	0 0	3 00	0 0	0 0
	81	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	3 00	0 0	0 0	0 0	0 0	3 00	0 0	0 0
	AA	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	3 00	0 0	0 0	0 0	0 0	3 00	0 0	0 0
	AC	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	3 00	0 0	0 0	0 0	0 0	3 00	0 0	0 0
	AE	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	3 00	0 0	0 0	0 0	0 0	3 00	0 0	0 0
	A1	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	3 00	0 0	0 0	0 0	0 0	3 00	0 0	0 0
	B0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	3 00	0 0	0 0	0 0	0 0	3 00	0 0	0 0
	B1	3 00	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	3 00	0 0	0 0	0 0	0 0	3 00	0 0	0 0
Mean		540	0	0	0	0	0	0300	0	0	0	1 004	0000	0002	1130	0300	0040	0510	0720
504																			
	00	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	0C	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	0E	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	01	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	2A	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	2C	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	2E	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	2B	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	21	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	4A	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	4C	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	4E	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	41	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0

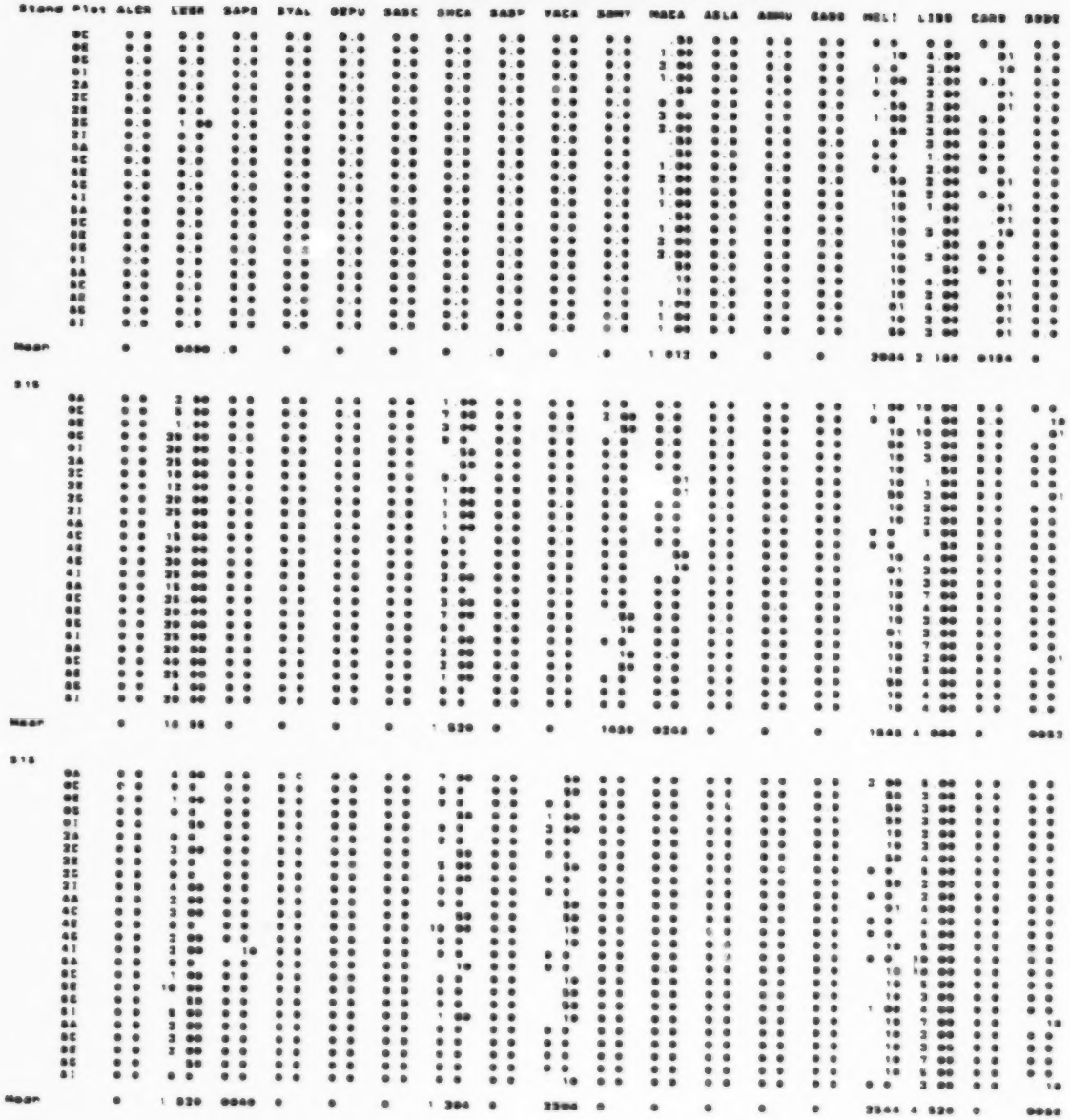
Athabasca Oil Sands Ecological Monitoring Program
August 1982 Survey of Vascular Plant Communities
in Pinus Banksiana Reference Stands
Species Cover % Values by Sub m Plots

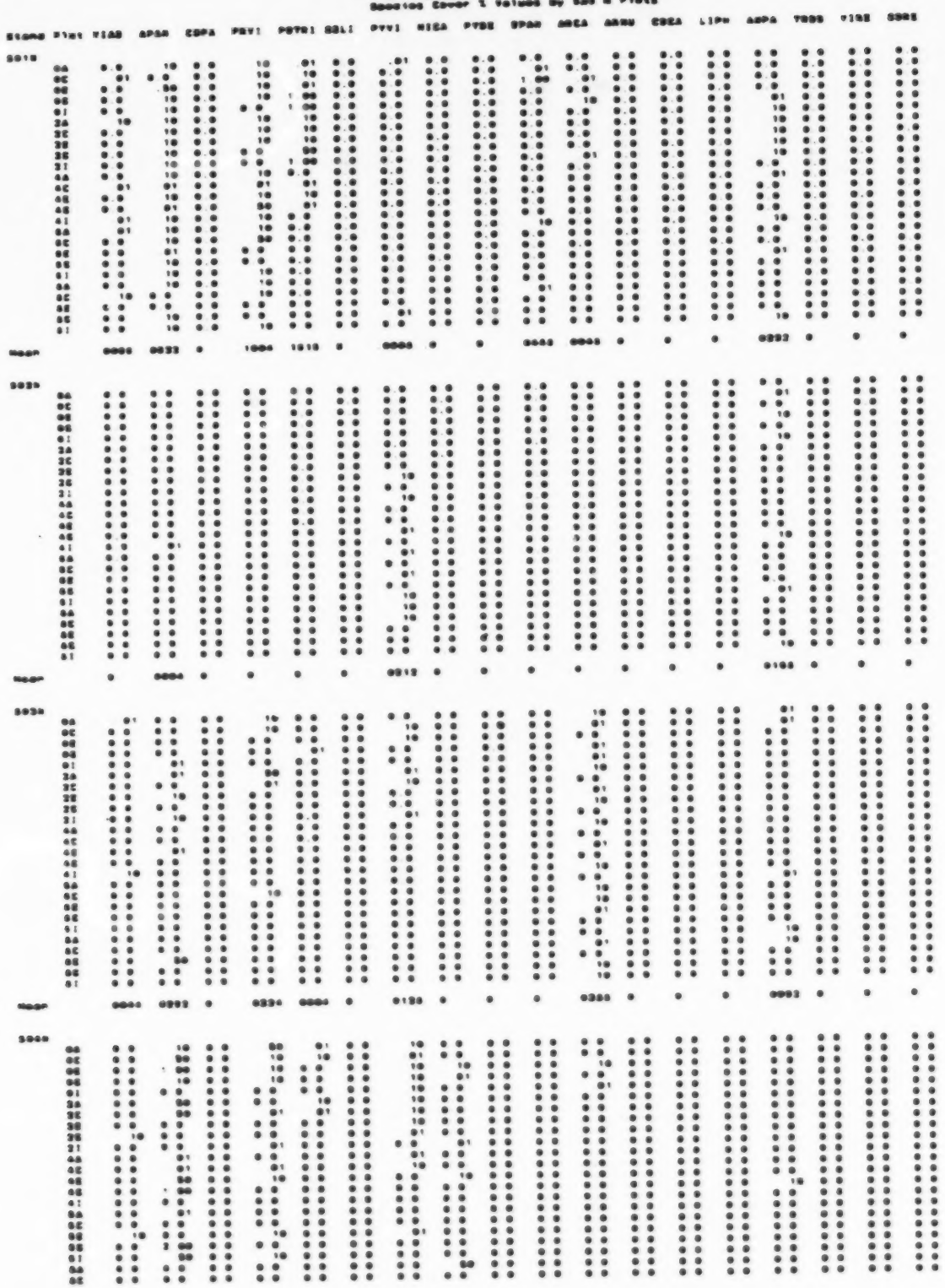
Stand	Plot	ALER	LEER	SAPS	SYAL	WEPU	SASC	SHEA	SASP	VACA	SAMY	MACA	ASLA	ARMU	SABB	HELI	LIBB	CARO	SUBB
	0A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.00	0.0	0.0	0.0	0.0	1.00	0.0	0.0
	0C	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.0	0.0	0.0	.10	0.0	0.0	0.0
	0E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.0	0.0	0.0	.01	.10	0.0	0.0
	01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.0	0.0	0.0	.10	1.00	0.0	0.0
	0A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.00	0.0	0.0	0.0	.01	.10	0.0	0.0
	0C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.00	0.0	0.0	0.0	.10	2.00	.01	0.0
	0E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.00	0.0	0.0	0.0	.01	2.00	0.0	0.0
	0G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.00	0.0	0.0	0.0	.10	2.00	.01	0.0
	01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.00	0.0	0.0	0.0	.10	0.0	.01	0.0
Mean		0	.2540	0	0	0	.0	0	0	0	0	.0400	0200	.0	.0	1412	1 672	.0045	0
505																			
	0A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	.01	0.0	0.0	0.0	0.0	0.0	.01
	0C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	1.00	.01	0.0	0.0	0.0	0.0	0.0
	0G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	.01	0.0	0.0	0.0	0.0	0.0	0.0
	2A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	.01
	2C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	.01	0.0
	2E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	.10
	2G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	.01
	21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	.01	0.0	0.0	0.0	0.0	0.0	.10
	4A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	.01
	4C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	.10	0.0	0.0	0.0	0.0	0.0	.01
	4E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	.01
	4G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	2.00	0.0	.10
	41	0.0	0.0	.10	0.0	0.0	0.0	0.0	.10	0.0	0.0	.50	.10	0.0	0.0	0.0	0.0	0.0	.10
	6A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	.10	0.0	0.0	.10
	6C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	.01	0.0	0.0	0.0	0.0	0.0	.10
	6E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	.01	0.0	0.0	0.0	0.0	0.0	.10
	6G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	.01	0.0	0.0	0.0	0.0	0.0	.10
	61	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	.01	0.0	0.0	0.0	0.0	0.0	.10
	8A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	.10	0.0	0.0	.01
	8C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	.01
	8E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	.01	0.0	0.0	0.0	0.0	0.0	.10
	8G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	.01	0.0	0.0	0.0	0.0	0.0	.10
	81	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	.10	0.0	0.0	0.0	0.0	0.0	.10
Mean		0	0	.0040	0	0	0	0	.0040	0	0	.3764	1504	.0048	0	.0404	.0080	.0020	.0304
507																			
	0A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.00	.10	.10	.01	.10	.10	.01	.01
	0C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.00	.10	.10	.01	.10	.10	.01	.10
	0E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.00	.10	.10	.01	.10	.10	.01	.10
	0G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.00	.10	.01	.01	.10	.10	.01	.10
	01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.00	.10	.01	.01	.10	.10	.01	.10
	2A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.00	.10	.01	.01	.10	.10	.01	.10
	2C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.00	.10	.01	.01	.10	.10	.01	.10
	2E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	.10	.10	.01	.10	.10	.01	.10
	2G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.00	.10	.01	.01	.10	.10	.01	.10
	21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.00	.10	.01	.01	.10	.10	.01	.10
	4A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	.10	.01	.01	.10	.10	.01	.10
	4C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.00	.10	.01	.01	.10	.10	.01	.10
	4E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.00	.10	.01	.01	.10	.10	.01	.10
	4G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.00	.10	.01	.01	.10	.10	.01	.10
	41	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.00	.10	.01	.01	.10	.10	.01	.10
	6A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.00	.10	.01	.01	.10	.10	.01	.10
	6C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.00	.10	.01	.01	.10	.10	.01	.10
	6E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.00	.10	.01	.01	.10	.10	.01	.10
	6G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.00	.10	.01	.01	.10	.10	.01	.10
	61	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.00	.10	.01	.01	.10	.10	.01	.10
Mean		0	0	0	0	0	0	0	0	0	0	1 433	2300	.0020	.0320	.0004	1 310	.0400	.1300
504																			
	0A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	.10	.01	.01	.10	.10	.01	.10
	0C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	.10	.01	.01	.10	.10	.01	.10
	0E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.00	.10	.01	.01	.10	.10	.01	.10
	0G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	.10	.01	.01	.10	.10	.01	.10
	01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.00	.10	.01	.01	.10	.10	.01	.10
	2A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.00	.10	.01	.01	.10	.10	.01	.10
	2C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.00	.10	.01	.01	.10	.10	.01	.10
	2E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.00	.10	.01	.01	.10	.10	.01	.10
	2G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.00	.10	.01	.01	.10	.10	.01	.10
	21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.00	.10	.01	.01	.10	.10	.01	.10
	4A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.00	.10	.01	.01	.10	.10	.01	.10
	4C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.00	.10	.01	.01	.10	.10	.01	.10
	4E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.00	.10	.01	.01	.10	.10	.01	.10
	4G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.00	.10	.01	.01	.10	.10	.01	.10
	41	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.00	.10	.01	.01	.10	.10	.01	.10
	6A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.00	.10	.01	.01	.10	.10	.01	.10
	6C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.00	.10	.01	.01	.10	.10	.01	.10
	6E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.00	.10	.01	.01	.10	.10	.01	.10
	6G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.00	.10	.01	.01	.10	.10	.01	.10
	61	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.00	.10	.01	.01	.10	.10	.01	.10
Mean		0	0	0	0	0	0	0	0	0	0	.0704	.3004	.0002	0	.0001	0	.0100	.1004
509																			
	0A	.25	.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.00	0.0	0.0	.01	0.0	3.00	0.0	0.0
	0C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.00	0.0	0.0	.01	0.0	1.00	0.0	.01
	0E	0.0	.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.00	0.0	0.0	.01	0.0	1.00	0.0	.01
	0G	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.00	0.0	0.0	.01	0.0	1.00	0.0	.01
	01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.00	0.0	0.0	.01	0.0	1.00	0.0	.01
	2A	.40	.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.00	0.0	0.0	.01	0.0	3.00	0.0	.01
	2C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.00	0.0	0.0	.01	0.0	3.00	0.0	.01
	2E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.00	0.0	0.0	.01	0.0	3.00	0.0	.01

Arkansas Nuclear One Environmental Monitoring Program
August 1983 Survey of Vascular Plant Communities
in Pitfall Exclosure Reference Stands
Species Cover % Values By Sub e Plots



Athabasca Oil Sands Ecological Monitoring Program
August 1992 Survey of Vascular Plant Communities
in Pinus Banksiana Reference Stands
Species Cover % Values by Sub = Plots

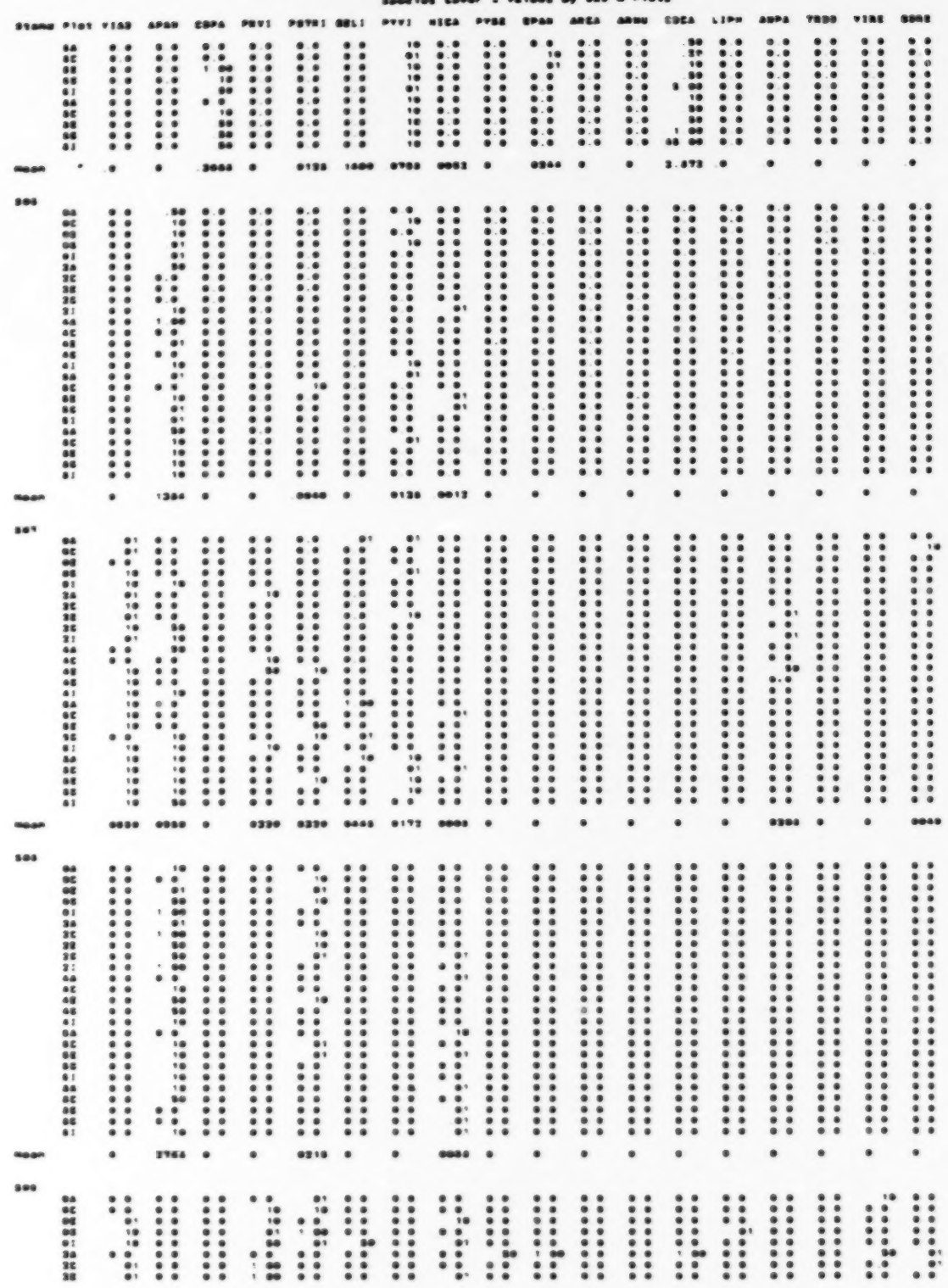




Athabasca Oil Sands Ecological Monitoring Program
August 1983 Survey of Vascular Plant Communities
in Pinus Banksiana Reference Stands
Species Cover % Values by Sub a Plots

Stand	Plot	VIAE	APAN	COPA	PRVI	POTR1	SELI	PYVI	HICA	PYSE	SPAN	ARCA	ARUV	CDCA	LIPH	AMPA	YUGL	VISE	SPRE
	0E	0 0	10	0 0	01	0 0	0 0	0 0	0.0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	05	0 0	00	0 0	0 0	0 0	0 0	10	0.0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	01	0 0	01	0 0	0 0	0 0	0 0	0 0	0.0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
Mean		0000	2020	0	0401	0000	0	0370	0200	0	0	0004	0	0	0	0000	0	0	0
5019																			
	0A	01	00	0 0	10	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	0C	01	00	0 0	01	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	01	0 0	0 0	0 0
	0E	0 01	00	0 0	00	0 0	0 0	0 0	0 0	0 0	00	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	05	01	00	0 0	00	10	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	01	0 0	00	0 0	00	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	2A	0 0	10	0 0	00	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	2C	0 0	01	0 0	00	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	2E	01	01	0 0	00	0 0	0 0	0 0	0 0	0 0	0 01	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	25	0 0	00	0 0	00	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	21	0 0	10	0 0	00	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	4A	0 0	01	0 0	0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	4C	0 0	10	0 0	00	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	4E	0 0	0	0 0	0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	45	0 0	0	0 0	00	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	41	0 01	0	0 0	00	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	6A	0 0	0	0 0	00	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	6C	0 0	10	0 0	0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	6E	0 0	01	0 0	00	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	65	0 0	10	0 0	1	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	61	0 0	00	0 0	00	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	8A	0 0	10	0 0	00	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	8C	0 0	00	0 0	00	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	8E	0 01	10	0 0	0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	85	0 0	00	0 0	00	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	81	0 0	00	0 0	00	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
Mean		0034	1030	0	3120	0040	0	0	0	0	0304	0200	0	0	0	0004	0	0	0
502																			
	0A	0 0	0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	0C	0 0	0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	0E	0 0	0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	05	0 0	0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	01	0 0	0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	2A	0 0	0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	2C	0 0	0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	2E	0 0	0	0 0	0 0	0 0	0 0	0 0	0 0	0 10	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	25	0 0	0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	21	0 0	0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	4A	0 0	0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	4C	0 0	0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	4E	0 0	0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	45	0 0	0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	41	0 0	0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	6A	0 0	0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	6C	0 0	0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	6E	0 0	0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	65	0 0	0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	61	0 0	01	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
Mean		0	0004	0	0	0	0	0000	0	0	0	0	0	0	0	0	0	0	0
503																			
	0A	0 0	0	0 0	10	0 0	1 00	0 0	0 0	0 0	00	0 0	3 00	1 00	01	0 0	0 0	0 0	0 0
	0C	0 0	0	00	10	0 0	00	0 0	0 0	0 0	0 0	0 0	00	00	01	0 0	0 0	0 0	0 0
	0E	0 0	0	00	0 0	10	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	01	0 0	0 0	0 0	0 0
	05	0 0	0	00	0 0	01	0 0	0 0	0 10	0 0	0 0	0 0	0 0	0 0	0 0	0 10	0 0	0 0	0 0
	01	0 0	0	00	0 0	01	0 0	0 0	0 01	0 0	0 0	0 0	0 0	0 0	0 0	0 01	0 0	0 0	0 0
	2A	0 0	0	00	10	0 0	0 0	0 50	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	2C	0 0	0	00	0 0	01	0 0	0 0	0 01	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	2E	0 0	0	00	0 0	01	0 0	0 0	0 01	0 0	0 50	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	25	0 0	0	00	0 0	01	0 0	0 0	0 01	0 0	0 10	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	21	0 0	0	00	0 0	01	0 0	0 0	0 01	0 0	0 0	0 0	3 00	0 0	0 0	0 0	0 0	0 0	0 0
	4A	0 0	0	00	0 0	01	0 0	0 0	0 01	0 0	0 0	0 0	1 00	0 0	0 0	0 0	0 0	0 0	0 0
	4C	0 0	0	00	0 0	01	0 0	0 0	0 01	0 0	0 0	0 0	2 00	0 0	0 0	0 0	0 0	0 0	0 0
	4E	0 0	0	00	0 0	01	0 0	0 0	0 01	0 0	0 0	0 0	3 00	0 0	0 0	0 0	0 0	0 0	0 0
	45	0 0	0	00	0 0	01	0 0	0 0	0 01	0 0	0 0	0 0	3 00	0 0	0 0	0 0	0 0	0 0	0 0
	41	0 0	0	00	0 0	01	0 0	0 0	0 01	0 0	0 0	0 0	1 00	0 0	0 0	0 0	0 0	0 0	0 0
	6A	0 0	0	00	0 0	01	0 0	0 0	0 01	0 0	0 0	0 0	2 00	0 0	0 0	0 0	0 0	0 0	0 0
	6C	0 0	0	00	0 0	01	0 0	0 0	0 01	0 0	0 0	0 0	2 00	0 0	0 0	0 0	0 0	0 0	0 0
	6E	0 0	0	00	0 0	01	0 0	0 0	0 01	0 0	0 0	0 0	2 00	0 0	0 0	0 0	0 0	0 0	0 0
	65	0 0	0	00	0 0	01	0 0	0 0	0 01	0 0	0 0	0 0	2 00	0 0	0 0	0 0	0 0	0 0	0 0
	61	0 0	0	00	0 0	01	3 00	0 0	0 01	0 10	0 0	0 0	2 00	0 0	0 0	0 0	0 0	0 0	0 0
Mean		0000	0	0030	0200	1400	1000	0300	0006	0004	0020	0	0230	0000	0002	0120	0	0	0
504																			
	0A	0 0	0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	00	0 0	0 0	0 0	0 0	0 0
	0C	0 0	0	00	10	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	00	0 0	0 0	0 0	0 0	0 0
	0E	0 0	0	00	10	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	00	0 0	0 0	0 0	0 0	0 0
	05	0 0	0	00	0 0	01	0 0	0 0	0 10	0 0	0 0	0 0	0 0	00	0 0	0 0	0 0	0 0	0 0
	01	0 0	0	00	0 0	01	0 0	0 0	0 01	0 0	0 0	0 0	0 0	00	0 0	0 0	0 0	0 0	0 0
	2A	0 0	0	00	10	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	00	0 0	0 0	0 0	0 0	0 0
	2C	0 0	0	00	0 0	01	0 0	0 0	0 01	0 0	0 0	0 0	0 0	00	0 0	0 0	0 0	0 0	0 0
	2E	0 0	0	00	0 0	01	0 0	0 0	0 01	0 0	0 50	0 0	0 0	00	0 0	0 0	0 0	0 0	0 0
	25	0 0	0	00	0 0	01	0 0	0 0	0 01	0 0	0 0	0 0	0 0	00	0 0	0 0	0 0	0 0	0 0
	21	0 0	0	00	0 0	01	0 0	0 0	0 01	0 0	0 0	0 0	3 00	00	0 0	0 0	0 0	0 0	0 0
	4A	0 0	0	00	0 0	01	0 0	0 0	0 01	0 0	0 0	0 0	1 00	00	0 0	0 0	0 0	0 0	0 0
	4C	0 0	0	00	0 0	01	0 0	0 0	0 01	0 0	0 0	0 0	3 00	00	0 0	0 0	0 0	0 0	0 0
	4E	0 0	0	00	0 0	01	0 0	0 0	0 01	0 0	0 0	0 0	3 00	00	0 0	0 0	0 0	0 0	0 0
	45	0 0	0	00	0 0	01	0 0	0 0	0 01	0 0	0 0	0 0	3 00	00	0 0	0 0	0 0	0 0	0 0
	41	0 0	0	00	0 0	01	0 0	0 0	0 01	0 0	0 0	0 0	1 00	00	0 0	0 0	0 0	0 0	0 0

Athabasca Oil Sands Geological Monitoring Program
August 1982 Survey of Vascular Plant Communities
in Piezometric Reference Stands
Species Cover % Values By Sub & Plots



Athabasca Oil Sands Geological Monitoring Program
August 1992 Survey of Vascular Plant Communities
in Pinus banksiana Reference Stands
Species Cover % Values by Sub m Plots

Stand	Plot	VIAB	APAN	CRPA	PRVI	POTR1	SALI	PYVI	NICA	PYBE	EPAN	ARCA	ARNU	COCA	LIPH	ANPA	TRBE	VIRE	GORE
	3E	01	0 0	0 0	1.00	.50	0 0	0 0	0 0	0 0	0 0	0 0	0 0	.50	.01	0 0	0 0	0 0	0 0
	3I	.10	0 0	0 0	.10	.50	1.00	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	4A	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	.01	0 0	0 0	.50	0 0	0 0	0 0	0 0	.01
	4C	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	4E	.10	0 0	0 0	.50	0 0	0 0	0 0	.10	0 0	0 0	0 0	0 0	0 0	.10	0 0	0 0	0 0	.10
	4G	0 0	0 0	0 0	.50	0 0	0 0	.10	0 0	0 0	0 0	0 0	0 0	.10	0 0	0 0	0 0	0 0	.50
	4I	0 0	0 0	0 0	.10	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	4A	0 0	0 0	0 0	.10	.10	0 0	0 0	.10	0 0	0 0	0 0	0 0	.10	0 0	0 0	0 0	0 0	0 0
	4C	.10	0 0	0 0	.50	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	4E	0 0	0 0	0 0	.10	.50	0 0	0 0	.10	0 0	0 0	0 0	0 0	0 0	.10	0 0	0 0	0 0	0 0
	4G	.10	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	4I	0 0	0 0	0 0	.01	0 0	.01	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	.10
	4A	.10	0 0	0 0	1.00	0 0	2.00	0 0	.01	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	.10
	4C	0 0	0 0	0 0	.50	.10	.50	0 0	.10	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	4E	0 0	0 0	0 0	.10	.10	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	4G	.10	0 0	0 0	0 0	.10	.50	0 0	.10	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
Mean		.0410	.0	.0	.3134	.1083	.2984	.0240	.0872	.0200	.0404	.0	.0	.0860	.0058	.0	.0	.0240	.0232
S10																			
	0A	0 0	0 0	0 0	0 0	0 0	3.00	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	0C	0 0	0 0	0 0	0 0	0 0	3.00	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	0E	0 0	0	0 0	0 0	0 0	0	.10	.01	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	0G	0 0	.10	0 0	0 0	0 0	.50	.50	.50	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	0I	0 0	.50	0 0	0 0	0 0	3.00	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	0A	0 0	0	0 0	0 0	0 0	0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	0C	0 0	0	0 0	0 0	0 0	0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	0E	0 0	0	0 0	0 0	0 0	0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	0G	0 0	0	0 0	0 0	0 0	0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	0I	0 0	0	0 0	0 0	0 0	0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	1A	0 0	0	0 0	0 0	0 0	0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	1C	0 0	0	0 0	0 0	0 0	0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	1E	0 0	0	0 0	0 0	0 0	0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	1G	0 0	0	0 0	0 0	0 0	0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	1I	0 0	0	0 0	0 0	0 0	0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	2A	0 0	0	0 0	0 0	0 0	0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	2C	0 0	0	0 0	0 0	0 0	0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	2E	0 0	0	0 0	0 0	0 0	0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	2G	0 0	0	0 0	0 0	0 0	0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	2I	0 0	0	0 0	0 0	0 0	0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	3A	0 0	0	0 0	0 0	0 0	0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	3C	0 0	0	0 0	0 0	0 0	0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	3E	0 0	0	0 0	0 0	0 0	0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	3G	0 0	0	0 0	0 0	0 0	0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	3I	0 0	0	0 0	0 0	0 0	0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
Mean		0	0355	0	0	0040	.3041	0235	0205	0	0	0	0	0	0	0	0	0	0
S110																			
	0A	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	0C	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	0E	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	0G	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	0I	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	1A	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	1C	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	1E	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	1G	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	1I	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	2A	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	2C	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	2E	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	2G	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	2I	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	3A	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	3C	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	3E	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	3G	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	3I	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
Mean		0	0	0	0	0	0084	0084	0	0	0	0208	0	.3972	0008	0	0140	0	0	0
S12																			
	0A	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	0C	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	0E	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	0G	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	0I	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	1A	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	1C	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	1E	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	1G	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	1I	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	2A	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	2C	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	2E	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	2G	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	2I	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	3A	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	3C	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	3E	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	3G	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	3I	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
Mean		0	0	0	0	0	1000	0830	0	0	0	0	0	0	0	0	0	0	0
S14																			
	0A	0 0	0 0	0 0	0 0	.10	2.00	0 0	.01	0 0	.10	0 0	0 0	2.00	0 0	0 0	0 0	0 0	0 0

Athabasca Oil Sands Geological Monitoring Program
August 1983 Survey of Vascular Plant Communities
in Pinus Banksiana Reference Stands
Species Cover % Values By Sub m Plots

Stand	Plot	VIAD	APAN	COPA	PRVI	POTR1	GEL1	PYV1	HICA	PYSE	EPAN	ARCA	ARNU	COCA	LIPH	ANPA	TRES	VIRE	GOAS
	0C	0.0	0.0	1.00	0.0	0 0	10	0 0	0 0	0.0	0.0	0.0	0 0	1.00	0.0	0.0	0.0	0.0	0.0
	0E	0.0	0.0	1.00	0.0	50	2.00	0 0	0.0	0.0	0.0	0.0	0.0	1.00	0.0	0.0	0.0	0.0	0.0
	0G	0.0	0.0	0.0	0.0	0 0	1.00	0 0	0.0	0.0	0.0	0.0	0.0	5.00	0.0	0.0	0.0	0.0	0.0
	01	0.0	0.0	0.0	0.0	50	2.00	10	0.0	0.0	0.0	0.0	0.0	3.00	0.0	0.0	0.0	0.0	0.0
	2A	0.0	0.0	3.00	0.0	10	10	10	0.0	0.0	0.0	0.0	0.0	10	0.0	0.0	0.0	0.0	0.0
	2C	0.0	0.0	1.00	0.0	10	1.00	10	0.0	0.0	0.0	0.0	0.0	1.00	0.0	0.0	0.0	0.0	0.0
	2E	0.0	0.0	1.00	0.0	10	1.00	0.0	0.0	0.0	0.0	0.0	0.0	2.00	0.0	0.0	0.0	0.0	0.0
	2G	0.0	0.0	1.00	0.0	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.00	0.0	0.0	0.0	0.0	0.0
	2I	0.0	0.0	50	0.0	01	10	0.0	0.0	0.0	0.0	0.0	0.0	50	0.0	0.0	0.0	0.0	0.0
	4A	0.0	0.0	0.0	0.0	01	50	10	0.0	0.0	0.0	0.0	0.0	50	0.0	0.0	0.0	0.0	0.0
	4C	0.0	0.0	1.00	0.0	01	0 0	10	0.0	0.0	0.0	0.0	0.0	50	0.0	0.0	0.0	0.0	0.0
	4E	0.0	0.0	2.00	0.0	10	1.00	50	0.0	0.0	0.0	0.0	0.0	3.00	0.0	0.0	0.0	0.0	0.0
	4G	0.0	0.0	2.00	0.0	10	1.00	10	0.0	0.0	0.0	0.0	0.0	50	0.0	0.0	0.0	0.0	0.0
	4I	0.0	0.0	1.00	0.0	10	10	10	0.0	0.0	0.0	0.0	0.0	50	0.0	0.0	0.0	0.0	0.0
	6A	01	0.0	10	0.0	0.0	1.00	01	0.0	0.0	0.0	0.0	0.0	50	0.0	0.0	0.0	0.0	0.0
	6C	0.0	0.0	50	0.0	0.0	1.00	0.0	0.0	0.0	0.0	0.0	0.0	50	0.0	0.0	0.0	0.0	0.0
	6E	0.0	0.0	2.00	0.0	10	50	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.0	0.0	0.0	0.0	0.0
	6G	0.0	0.0	50	0.0	10	50	10	0.0	0.0	0.0	0.0	0.0	50	0.0	0.0	0.0	0.0	0.0
	6I	0.0	0.0	2.00	0.0	10	50	10	0.0	0.0	0.0	0.0	0.0	50	0.0	0.0	0.0	0.0	0.0
Mean		.0003	0	.0040	.0	.0025	.7000	.0004	.0003	0	.0040	0	.0	1.200	.0	.0	.0	.0	0
S1S																			
	0A	0.0	0 0	0 0	50	10	0 0	0 0	0 0	0 0	0 0	0 0	0 0	10.00	0 0	0 0	0 0	0.0	10
	0C	0 0	0 0	0 0	1.00	01	0 0	0 0	0 0	10	0 0	0 0	0 0	3.00	01	0 0	0 0	01	0 0
	0E	0 0	0 0	0 0	10	10	0 0	0 0	0 0	0 0	0 0	0 0	0 0	1.00	0 0	0 0	0 0	01	0 0
	0G	0 0	0 0	0 0	01	10	0 0	0 0	0 0	0 0	0 0	0 0	0 0	1.00	0 0	0 0	0 0	01	0 0
	01	0 0	0 0	0 0	0 0	10	0 0	0 0	0 0	0 0	0 0	0 0	0 0	1.00	0 0	0 0	0 0	0 0	0 0
	2A	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	3.00	0 0	0 0	0 0	0 0	0 0
	2C	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	1.00	0 0	0 0	0 0	0 0	10
	2E	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	10	0 0	0 0	0 0	1.00	0 0	0 0	0 0	0 0	0 0
	2G	0 0	0 0	0 0	0 0	50	0 0	0 0	0 0	0 0	0 0	0 0	0 0	2.00	0 0	0 0	0 0	0 0	0 0
	2I	0 0	0 0	0 0	0 0	50	0 0	0 0	0 0	0 0	0 0	0 0	0 0	2.00	0 0	0 0	0 0	0 0	0 0
	4A	0 0	0 0	0 0	01	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	2.00	0 0	0 0	0 0	0 0	0 0
	4C	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	2.00	0 0	0 0	0 0	0 0	0 0
	4E	0 0	0 0	0 0	0 0	10	0 0	0 0	0 0	10	0 0	0 0	0 0	2.00	0 0	0 0	0 0	0 0	10
	4G	0 0	0 0	0 0	0 0	50	0 0	0 0	0 0	0 0	0 0	0 0	0 0	10.00	0 0	0 0	0 0	0 0	0 0
	4I	0 0	0 0	0 0	0 0	50	0 0	0 0	0 0	0 0	0 0	0 0	0 0	10.00	0 0	0 0	0 0	0 0	0 0
	6A	0 0	0 0	0 0	10	50	0 0	0 0	0 0	0 0	0 0	0 0	0 0	10.00	0 0	0 0	0 0	0 0	0 0
	6C	0 0	0 0	0 0	0 0	10	0 0	0 0	0 0	0 0	0 0	0 0	0 0	10.00	0 0	0 0	0 0	0 0	0 0
	6E	0 0	0 0	0 0	0 0	10	0 0	0 0	0 0	0 0	0 0	0 0	0 0	7.00	0 0	0 0	0 0	0 0	0 0
	6G	0 0	0 0	0 0	0 0	10	0 0	0 0	0 0	10	0 0	0 0	0 0	7.00	0 0	0 0	0 0	0 0	0 0
	6I	0 0	0 0	0 0	0 0	10	0 0	0 0	0 0	0 0	0 0	0 0	0 0	10.00	0 0	0 0	0 0	0 0	0 0
	8A	0 0	0 0	0 0	0 0	50	0 0	0 0	0 0	0 0	0 0	0 0	0 0	7.00	0 0	0 0	0 0	0 0	0 0
	8C	0 0	0 0	0 0	0 0	10	0 0	0 0	0 0	0 0	0 0	0 0	0 0	10.00	10	0 0	0 0	0 0	0 0
	8E	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	7.00	0 0	0 0	0 0	0 0	0 0
	8G	0 0	0 0	0 0	50	10	0 0	0 0	0 0	10	0 0	0 0	0 0	2.00	0 0	0 0	0 0	0 0	0 0
	8I	0 0	0 0	0 0	50	10	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0.00	0 0	0 0	0 0	0 0	0 0
Mean		0	0	0	.1040	.1044	0	.0150	.0000	.0200	0	0	0	0.200	.0044	0	.0001	.0200	
S1S																			
	0A	0 0	0 0	0 0	10	01	0 0	0 0	01	10	50	0 0	0 0	10.00	0 0	0 0	50	0 0	0 0
	0C	0 0	0 0	0 0	0 0	10	0 0	0 0	0 0	0 0	1.00	0 0	0 0	7.00	0 0	0 0	0 0	0 0	0 0
	0E	0 0	0 0	0 0	0 0	50	0 0	0 0	01	0 0	0 0	0 0	0 0	3.00	0 0	0 0	0 0	0 0	0 0
	0G	0 0	0 0	0 0	0 0	10	0 0	0 0	01	0 0	50	0 0	0 0	10.00	0 0	0 0	0 0	0 0	0 0
	01	0 0	0 0	0 0	0 0	0 0	0 0	0 0	10	0 0	0 0	0 0	0 0	5.00	10	0 0	0 0	0 0	10
	2A	0 0	0 0	0 0	50	01	0 0	0 0	0 0	0 0	0 0	0 0	0 0	10.00	0 0	0 0	0 0	0 0	01
	2C	0 0	0 0	0 0	0 0	0 0	0 0	0 0	10	0 0	0 0	0 0	0 0	10.00	0 0	0 0	50	0 0	0 0
	2E	0 0	0 0	0 0	1.00	01	0 0	0 0	0 0	10	2.00	0 0	0 0	12.00	0 0	0 0	0 0	01	0 0
	2G	0 0	0 0	0 0	50	01	0 0	0 0	0 0	0 0	50	0 0	0 0	7.00	0 0	0 0	50	0 0	0 0
	2I	0 0	0 0	0 0	50	0 0	0 0	0 0	0 0	0 0	50	0 0	0 0	7.00	0 0	0 0	50	0 0	0 0
	4A	0 0	0 0	0 0	10	0 0	0 0	0 0	0 0	0 0	50	0 0	0 0	7.00	0 0	0 0	0 0	0 0	01
	4C	0 0	0 0	0 0	50	0 0	0 0	0 0	10	0 0	10	0 0	0 0	4.00	0 0	0 0	0 0	0 0	0 0
	4E	0 0	0 0	0 0	50	10	0 0	0 0	10	0 0	2.00	0 0	0 0	10.00	0 0	0 0	50	0 0	10
	4G	0 0	0 0	0 0	50	0 0	0 0	0 0	10	0 0	10	0 0	0 0	7.00	0 0	0 0	0 0	0 0	10
	4I	0 0	0 0	0 0	50	10	0 0	0 0	10	0 0	10	0 0	0 0	10.00	0 0	0 0	50	0 0	0 0
	6A	0 0	0 0	0 0	0 0	50	0 0	0 0	10	0 0	0 0	0 0	0 0	10.00	0 0	0 0	0 0	0 0	0 0
	6C	0 0	0 0	0 0	1.00	50	0 0	0 0	10	0 0	0 0	0 0	0 0	10.00	01	0 0	50	0 0	0 0
	6E	0 0	0 0	0 0	0 0	10	0 0	0 0	10	0 0	0 0	0 0	0 0	5.00	0 0	0 0	0 0	0 0	0 0
	6G	0 0	0 0	0 0	0 0	10	0 0	0 0	01	0 0	0 0	0 0	0 0	5.00	0 0	0 0	0 0	0 0	0 0
	6I	0 0	0 0	0 0	0 0	10	0 0	0 0	10	0 0	0 0	0 0	0 0	5.00	0 0	0 0	0 0	0 0	0 0
	8A	0 0	0 0	0 0	0 0	50	0 0	0 0	01	0 0	0 0	0 0	0 0	10.00	0 0	0 0	0 0	0 0	0 0
	8C	0 0	0 0	0 0	0 0	10	0 0	0 0	10	0 0	0 0	0 0	0 0	10.00	0 0	0 0	1.00	0 0	0 0
	8E	0 0	0 0	0 0	0 0	10	0 0	0 0	10	0 0	0 0	0 0	0 0	5.00	0 0	0 0	50	0 0	0 0
	8G	0 0	0 0	0 0	0 0	10	0 0	0 0	10	0 0	0 0	0 0	0 0	5.00	0 0	0 0	0 0	0 0	0 0
	8I	0 0	0 0	0 0	0 0	10	0 0	0 0	10	0 0	0 0	0 0	0 0	5.00	0 0	0 0	0 0	0 0	0 0
Mean		0	0	0	.2040	.1020	0	.0200	.0700	.0040	.3100	0	0	8.720	.0000	0	.2720	.0044	.0100

Athabasca Oil Sands Ecological Monitoring Program
August 1982 Survey of Vascular Plant Communities
in Pinus banksiana Reference Stands
Species Cover % Values by 5x5 m Plots

Stand	Plot	LABC	VIAM	PEPA	ASCI	ACMI	ANRA	DRBP	BEBP	BEBE	BECY	STLO	RACE	MINT	SEBI	ARLY	CHEN	PELA	AOFL
301N																			
	0A	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0C	0.0	0.0	0.0	0.0	.01	.50	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0G	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2A	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2E	0.0	0.0	0.0	0.0	.10	.10	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	21	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4A	0.0	0.0	0.0	0.0	.01	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4C	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4E	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4G	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	41	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	81	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	9A	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	9C	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	9E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	9G	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	91	0.0	0.0	0.0	0.0	.10	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean		.0	.0	.0	.0	.0352	.0324	.0	.0	.0408	.0	.0	.0	0	.0	.0	.0	.0	0
302N																			
	0A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	41	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	81	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	9A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	9C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	9E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	9G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	91	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean		.0	0	.0	.0	.0	.0	0	.0	.0130	0	0	.0	.0	0	0	.0	0	.0
303N																			
	0A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2A	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	41	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8A	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	81	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean		.0	0	.0	.0	.0003	0	.0	0	.0	.0004	0	.0	.0	0	0	0	0	0
304N																			
	0A	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0C	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0E	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	01	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2A	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2C	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	21	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	41	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0
	8A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0
	8G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	81	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	9A	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	9C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Athabasca Oil Sands Ecological Monitoring Program
August 1982 Survey of Vascular Plant Communities
in Pinus Banksiana Reference Stands
Species Cover % Values By 5x5 m Plots

Stand	Plot	LABC	VIAM	PEPA	ASCI	ACMI	AMRA	ORSP	SESP	SESE	SECY	STLO	RACE	MINT	EQSI	ARLY	CHEN	PELA	AGPL
	8E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0
Mean		0	0	.0	0	.0003	.0	.0	0	.0	.0004	0004	.0	0	.0	0012	0	0	0
S019																			
	0A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0
	0C	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0
	0E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	.01	0.0	0.0
	0G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	.10	0.0	.01	0.0	0.0
	0I	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0
	2A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0
	2C	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0
	2E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0
	2G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	.01	1.00	.50	0.0	0.0	0.0	0.0
	2I	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0
	4A	0.0	0.0	0.0	.01	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0
	4C	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	1.00	0.0	0.0
	4E	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0
	4G	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	.01	.50	0.0	0.0
	4I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0
	6A	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0
	6C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	.50	0.0	0.0
	6E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	.10	0.0	.10	.10	.10
	6G	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	.10	0.0	.10	0.0	0.0
	6I	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	.10	0.0	.01	0.0	0.0
	8A	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	.10	0.0	0.0	0.0	0.0
	8C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	.10	0.0	.10	0.0	0.0
	8E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.0	0.0	0.0	0.0
	8G	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	.10	0.0	0.0
	8I	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	.10	0.0	0.0	0.0	0.0
Mean		0	.0	.0	.0004	.0418	0	.0	.0	0006	0	0008	.0004	.0400	1560	0008	.1048	0040	.0040
S02																			
	0A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean		0	0	0	.0	0	0	0	0	0	0	0	.0	0	0	.0	.0	0	0
S03																			
	0A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
S04																			
	0A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Athabasca Oil Sands Ecological Monitoring Program
August 1982 Survey of Vascular Plant Communities
in Pinus Banksiana Reference Stands
Species Cover % Values By 5x5 m Plots

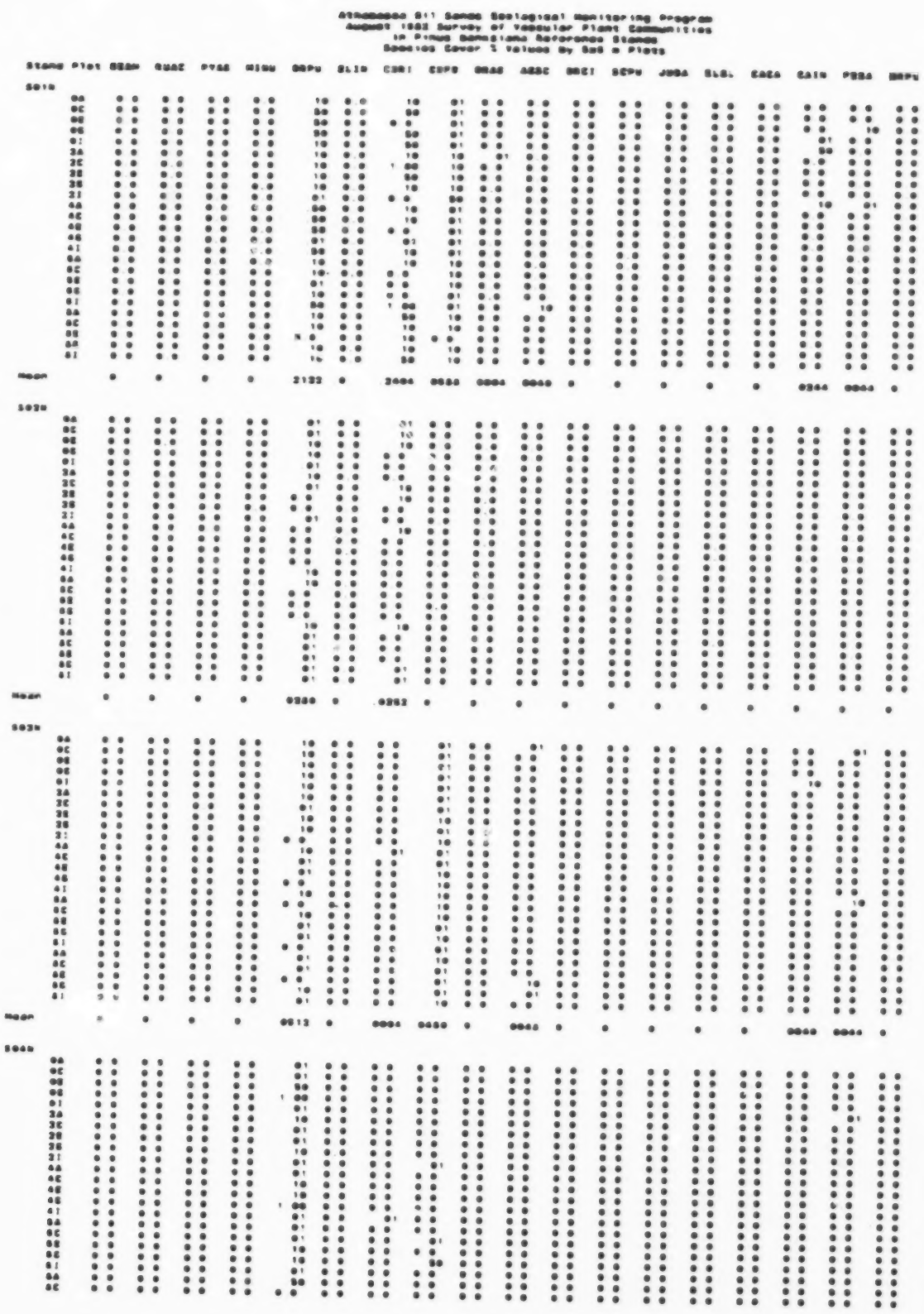
Stand	Plot	LABC	VIAM	PEPA	ASCI	ACNI	ANRA	BREP	SESP	SESE	SEEY	STLO	RACE	MINT	EEBI	ARLY	CHEN	PELA	AOPL
	8A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	81	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	81	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean		.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	0
305																			
	8A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	81	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	41	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	61	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	81	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean		.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	0
307																			
	8A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	81	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	41	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	61	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	81	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean		0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	0	0	0
308																			
	8A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	81	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	41	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	61	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	81	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean		.0	.0	.0	.0	.0	.0	.0	0	0	.0	.0	.0	0	.0	.0	0	.0	0
309																			
	8A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	81	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Atmospheric Oil Sands Geological Monitoring Program
August 1982 Survey of Vascular Plant Communities
in Pinus Banksiana Reference Stands
Species Cover % Values by Sub a Plots

Stand	Plot	LEDC	VIAM	PEPA	ASCI	ACMI	ARUA	BASP	BEEP	BEBE	BBCY	STLO	RACE	MINT	EBBI	ARLY	EMBR	PELA	AGPL
	2B	0.0	0 0	0 0	0 0	0 0	0.0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	2I	0 0	0 0	0.0	0.0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	4A	0.0	0 0	0.0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	4C	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	4E	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	4G	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	4I	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	6A	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	6C	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	6E	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	6G	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	6I	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
Mean		0	0	0	0	0	.0040	0	0	.0040	0	0	0	0	0	0	0	0	0
S10																			
	8A	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	8C	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	8E	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	8G	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	8I	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	2A	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	2C	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	2E	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	2G	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	2I	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	4A	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	4C	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	4E	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	4G	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	4I	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	6A	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	6C	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	6E	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	6G	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	6I	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
Mean		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
S11B																			
	8A	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	8C	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	8E	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	8G	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	8I	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	2A	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	2C	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	2E	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	2G	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	2I	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	4A	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	4C	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	4E	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	4G	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	4I	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	6A	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	6C	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	6E	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	6G	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	6I	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
Mean		0	0	0	0	0	0	0	0	0	0	0	0	.0080	.0002	0	0	.0020	0
S12																			
	8A	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	8C	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	8E	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	8G	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	8I	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	2A	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	2C	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	2E	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	2G	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	2I	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	4A	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	4C	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	4E	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	4G	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	4I	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	6A	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	6C	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	6E	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	6G	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	6I	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
Mean		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
S14																			
	8A	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0

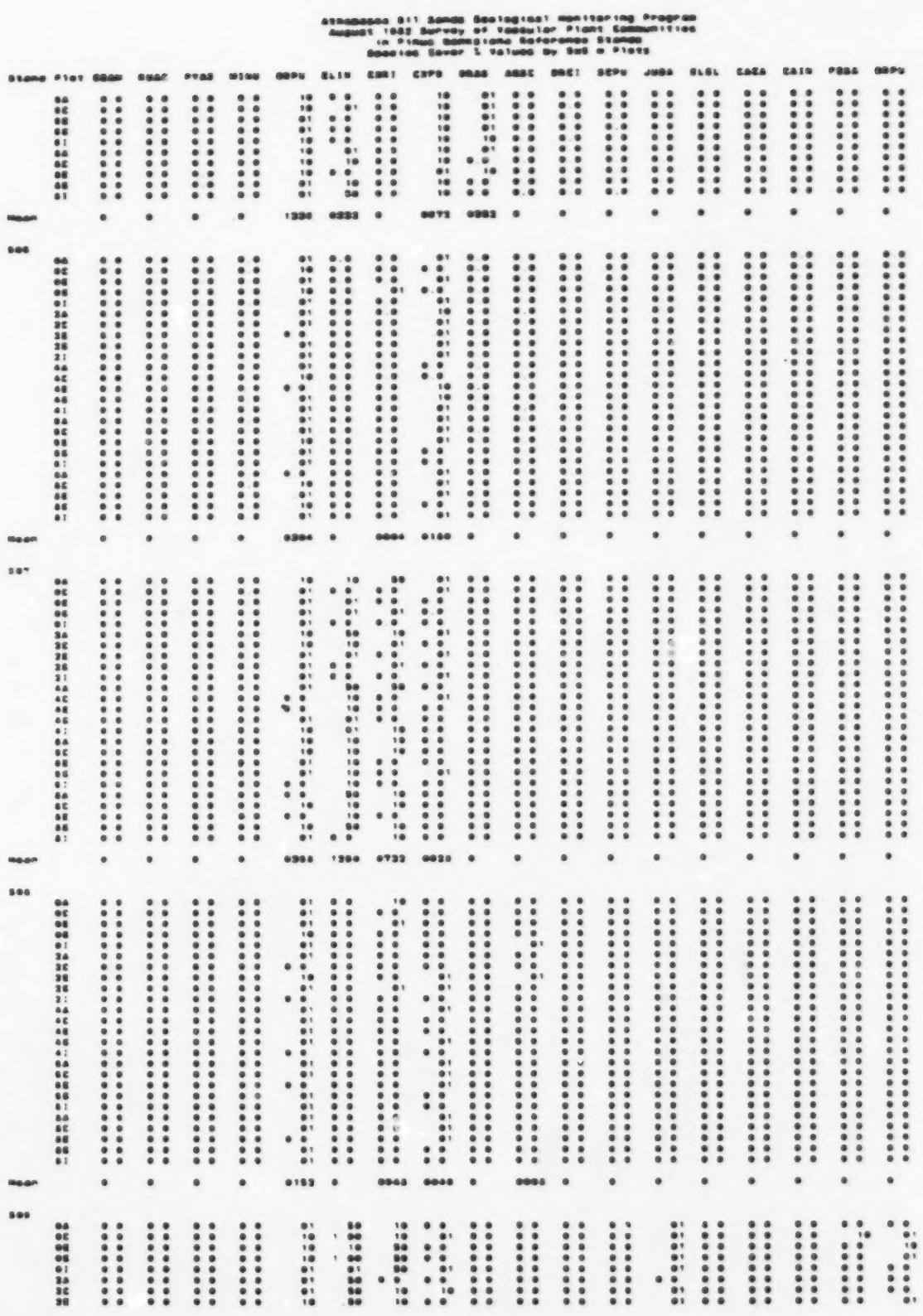
Atmospheric Sil Sonde Geological Monitoring Program
August 1983 Survey of Vascular Plant Communities
in Pinus Ponderosa Reference Stands
Species Cover % Values by Sp0 n Plots

Stand	Plot	LASE	VIAM	POPA	ASCI	ACHI	AMRA	DRSP	SESP	SESE	SECY	STLO	RACE	MINT	GEBI	ARLY	EMBR	PELA	AGPL
	0C	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	0E	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	0F	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	01	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	2A	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	2C	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	2E	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	2F	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	21	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	4A	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	4C	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	4E	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	4F	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	41	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	6A	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	6C	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	6E	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	6F	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	81	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
Mean		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
S15																			
	0A	0 0		01	0 0		00	0 0											
	0C	0 0		00		0 00	00		01		10								
	0E	0 0		10			00		01		10								
	0F		10		0 0		0												
	01		00		0		0												
	2A	0	01		0		0												
	2C		01		0		0												
	2E	0	00		0		0												
	2F		00		0		01												
	21	0	00		0		10												
	4A		00		0														
	4C	0	00		0		0												
	4E		00		0		0												
	4F		00		0		0												
	41		00		0		0												
	6A		00		0		0												
	6C	0	00		0		0												
	6E		00		0		0												
	6F		00		0		0												
	81		00		0		0												
Mean		0044	0244	0200	0000	0000	0000	0	0	0	0	0	0	0	0	0	0	0	0
S16																			
	0A		00																
	0C	1	00																
	0E		00																
	0F	1	00																
	01		00																
	2A	1	00																
	2C		00																
	2E	1	00																
	2F		00																
	21		00																
	4A	0	00																
	4C	2	00																
	4E		00																
	4F		00																
	41		00																
	6A		00																
	6C	1	00																
	6E	2	00																
	6F		00																
	81		00																
	8A		00																
	8C	4	00																
	8E	1	00																
	8F	0 0																	
Mean		7830	0100	1044	1044	0202	0000	0	0	0	0	0	0	0	0	0	0	0	0



Athabasca Oil Sands Geological Monitoring Program
August 1983 Survey of Vascular Plant Communities
in Pinus Banksiana Reference Stands
Species Cover % Values by Sub m Plots

Stand	Plot	BEAM	RUAC	PYAS	MIBU	BRPU	ELIN	CARI	CHPS	BRAS	ARSC	BRCI	SCPU	JUBA	ELSL	CACA	CAIN	PEBA	BRPU
	8B	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	8C	0 0	0 0	0 0	0 0	01	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	81	0 0	0 0	0 0	0 0	01	0 0	0 0	01	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
Mean		0	0	0	0	1402	0	0004	0212	0	0	0	0	0	0	0	0	0004	0
5010																			
	8A	0 0	0 0	0 0	0 0	50	0 0	50	01	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	8C	0 0	0 0	0 0	0 0	50	0 0	10	10	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	8E	0 0	0 0	0 0	0 0	50	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	8E	0 0	0 0	0 0	0 0	50	0 0	0 0	10	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	81	0 0	0 0	0 0	0 0	1 00	0 0	0 0	10	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	3A	0 0	0 0	0 0	0 0	10	0 0	0 0	1 00	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	3C	0 0	0 0	0 0	0 0	50	0 0	0 0	50	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	3E	0 0	0 0	0 0	0 0	10	01	10	50	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	3E	0 0	0 0	0 0	0 0	50	0 0	0 0	10	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	31	0 0	0 0	0 0	0 0	50	0 0	01	01	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	4A	0 0	0 0	0 0	0 0	0	0 0	0 0	50	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	4C	0 0	0 0	0 0	0 0	10	0 0	10	50	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	4E	0 0	0 0	0 0	0 0	01	0 0	0 0	50	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	4E	0 0	0 0	0 0	0 0	50	0 0	0 0	50	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	41	0 0	0 0	0 0	0 0	50	0 0	0 0	50	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	8A	0 0	0 0	0 0	0 0	10	0 0	10	50	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	8C	0 0	0 0	0 0	0 0	50	0 0	10	50	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	8E	0 0	0 0	0 0	0 0	50	0 0	10	50	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	8E	0 0	0 0	0 0	0 0	1 00	0 0	0 0	10	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	81	0 0	0 0	0 0	0 0	10	0 0	0 0	01	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	8A	0 0	0 0	0 0	0 0	1 00	0 0	0 0	50	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	8C	0 0	0 0	0 0	0 0	50	0 0	10	50	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	8E	0 0	0 0	0 0	0 0	50	0 0	0 0	10	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	8E	0 0	0 0	0 0	0 0	50	0 0	10	10	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	81	0 0	0 0	0 0	0 0	50	0 0	0 0	10	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
Mean		0	0	0	0	0404	0004	0024	2004	0	0	0	0	0	0	0	0	0	0
502																			
	8A	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	8C	0 0	0 0	0 0	0 0	0 01	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	8E	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	8E	0 0	0 0	0 0	0 0	0 01	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	81	0 0	0 0	0 0	0 0	0 01	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	3A	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 01	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	3C	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 01	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	3E	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 01	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	3E	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 01	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	31	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 01	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	4A	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	4C	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	4E	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	4E	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	41	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	8A	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	8C	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	8E	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	8E	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	81	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
Mean		0	0	0	0	0012	0	0	0008	0	0	0	0	0	0	0	0	0	0
503																			
	8A	0 0	0 0	0 0	0 0	50	50	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	8C	0 0	0 0	0 0	0 0	10	10	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	8E	0 0	0 0	0 0	0 0	50	50	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	8E	0 0	0 0	0 0	0 0	10	10	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	81	0 0	0 0	0 0	0 0	1 00	50	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	3A	0 0	0 0	0 0	0 0	10	50	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	3C	0 0	0 0	0 0	0 0	50	50	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	3E	0 0	0 0	0 0	0 0	01	01	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	3E	0 0	0 0	0 0	0 0	10	10	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	31	0 0	0 0	0 0	0 0	10	01	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	4A	0 0	0 0	0 0	0 0	50	10	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	4C	0 0	0 0	0 0	0 0	10	01	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	4E	0 0	0 0	0 0	0 0	10	50	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	4E	0 0	0 0	0 0	0 0	10	10	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	41	0 0	0 0	0 0	0 0	50	10	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	8A	0 0	0 0	0 0	0 0	10	10	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	8C	0 0	0 0	0 0	0 0	10	10	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	8E	0 0	0 0	0 0	0 0	50	10	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	8E	0 0	0 0	0 0	0 0	10	10	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	81	0 0	0 0	0 0	0 0	01	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	8A	0 0	0 0	0 0	0 0	10	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	8C	0 0	0 0	0 0	0 0	10	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	8E	0 0	0 0	0 0	0 0	50	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	8E	0 0	0 0	0 0	0 0	10	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	81	0 0	0 0	0 0	0 0	10	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
Mean		0	0	0	0	2406	1402	0	0004	0120	0	0	0400	0	0	0040	0	0	0
504																			
	8A	0 0	0 0	0 0	0 0	10	0 0	0 0	0 10	01	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	8C	0 0	0 0	0 0	0 0	10	0 0	0 0	01	01	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	8E	0 0	0 0	0 0	0 0	10	0 0	0 0	01	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	8E	0 0	0 0	0 0	0 0	10	0 0	0 0	01	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	81	0 0	0 0	0 0	0 0	10	0 0	0 0	10	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	3A	0 0	0 0	0 0	0 0	10	0 0	0 0	01	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	3C	0 0	0 0	0 0	0 0	50	0 0	0 0	10	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	3E	0 0	0 0	0 0	0 0	10	0 0	0 0	01	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	3E	0 0	0 0	0 0	0 0	50	0 0	0 0	10	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	31	0 0	0 0	0 0	0 0	10	0 0	0 0	01	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	4A	0 0	0 0	0 0	0 0	50	0 0	10	10	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	4C	0 0	0 0	0 0	0 0	10	0 0	0 0	01	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	4E	0 0	0 0	0 0	0 0	10	0 0	0 0	10	50	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	4E	0 0	0 0	0 0	0 0	10	0 0	0 0	01	10	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	41	0 0	0 0	0 0	0 0	10	0 0	0 0	10	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0



Atmospheric Oil Sands Biological Monitoring Program
August 1982 Survey of Vascular Plant Communities
in Pinus Banksiana Reference Stands
Species Cover % Values By Sub a Plots

Stand	Plot	SEAM	RUAC	PYAS	MINU	SHPU	ELIN	EMRI	EMPE	BRAS	AGSC	BRCI	SCPU	JUBA	ELEL	CACA	CAIN	POBA	SHPU
	3B	0 0	0 0	0 0	0 0		80	80	0 0	0 0	0 0	0 0	0 0	01	0 0	0 0	0 0	0 0	01
	3I	0 0	0 0	0 0	0 0		01	80		0 0	0 0	0 0	0 0	01	0 0	0 0	0 0	0 0	10
	4A	0 0	0 0	0 0	0 0		01	80	01	0 0	0 0	0 0	0 0	01	0 0	0 0	0 0	0 0	01
	4C	0 0	0 0	0 0	0 0		10	80		0 0	0 0	0 0	0 0	01	0 0	0 0	0 0	0 0	
	4E	0 0	0 0	0 0	0 0		10	10	01	0 0	0 0	0 0	0 0	01	0 0	0 0	0 0	0 0	01
	4G	0 0	0 0	0 0	0 0		10	10		0 0	0 0	0 0	0 0	01	0 0	0 0	0 0	0 0	
	4I	0 0	0 0	0 0	0 0		10	10		0 0	0 0	0 0	0 0	10	0 0	0 0	0 0	0 0	10
	4A	0 0	0 0	0 0	0 0		01	80		0 0	0 0	0 0	0 0	10	0 0	0 0	0 0	0 0	
	4C	0 0	0 0	0 0	0 0		10	10		0 0	0 0	0 0	0 0	10	0 0	0 0	0 0	0 0	10
	4E	0 0	0 0	0 0	0 0		10	10		0 0	0 0	0 0	0 0	10	0 0	0 0	0 0	0 0	
	4G	0 0	0 0	0 0	0 0		80	10	10	0 0	0 0	0 0	0 0	10	0 0	0 0	0 0	0 0	
	4I	0 0	0 0	0 0	0 0		80	10		0 0	0 0	0 0	0 0	10	0 0	0 0	0 0	0 0	10
	5A	0 0	0 0	0 0	0 0		80	10		0 0	0 0	0 0	0 0	10	0 0	0 0	0 0	0 0	
	5C	0 0	0 0	0 0	0 0		80	10	0 0	0 0	0 0	0 0	0 0	10	0 0	0 0	0 0	0 0	10
	5E	0 0	0 0	0 0	0 0		80	10		0 0	0 0	0 0	0 0	10	0 0	0 0	0 0	0 0	
	5G	0 0	0 0	0 0	0 0		80	10		0 0	0 0	0 0	0 0	10	0 0	0 0	0 0	0 0	
	5I	0 0	0 0	0 0	0 0		10	0 0		0 0	0 0	0 0	0 0	10	0 0	0 0	0 0	0 0	
Mean		0	0	0	0	1945	.0784	2300	.0104	0	.0	0	0	0480	0	0	0	0004	0304
S10																			
	0A	0 0	0 0	0 0	0 0		0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	0C	0 0	0 0	0 0	0 0		0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	0E	0 0	0 0	0 0	0 0		0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	0G	0 0	0 0	0 0	0 0		0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	0I	0 0	0 0	0 0	0 0		0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	2A	0 0	0 0	0 0	0 0		0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	2C	0 0	0 0	0 0	0 0		0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	2E	0 0	0 0	0 0	0 0		0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	2G	0 0	0 0	0 0	0 0		0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	2I	0 0	0 0	0 0	0 0		0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	4A	0 0	0 0	0 0	0 0		0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	4C	0 0	0 0	0 0	0 0		0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	4E	0 0	0 0	0 0	0 0		0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	4G	0 0	0 0	0 0	0 0		0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	4I	0 0	0 0	0 0	0 0		0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	5A	0 0	0 0	0 0	0 0		0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	5C	0 0	0 0	0 0	0 0		0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	5E	0 0	0 0	0 0	0 0		0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	5G	0 0	0 0	0 0	0 0		0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	5I	0 0	0 0	0 0	0 0		0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
Mean		0	0	0	0	0130	0	0	0012	0	0004	0	0	0	0	0	0	0	0
S110																			
	0A	0 0	0 0	0 0	0 0		0 0	10	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	0C	0 0	0 0	0 0	0 0		0 0	10	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	0E	0 0	0 0	0 0	0 0		0 0	10	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	0G	0 0	0 0	0 0	0 0		0 0	10	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	0I	0 0	0 0	0 0	0 0		0 0	10	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	2A	0 0	0 0	0 0	0 0		0 0	10	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	2C	0 0	0 0	0 0	0 0		0 0	10	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	2E	0 0	0 0	0 0	0 0		0 0	10	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	2G	0 0	0 0	0 0	0 0		0 0	10	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	2I	0 0	0 0	0 0	0 0		0 0	10	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	4A	0 0	0 0	0 0	0 0		0 0	10	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	4C	0 0	0 0	0 0	0 0		0 0	10	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	4E	0 0	0 0	0 0	0 0		0 0	10	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	4G	0 0	0 0	0 0	0 0		0 0	10	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	4I	0 0	0 0	0 0	0 0		0 0	10	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	5A	0 0	0 0	0 0	0 0		0 0	10	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	5C	0 0	0 0	0 0	0 0		0 0	10	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	5E	0 0	0 0	0 0	0 0		0 0	10	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	5G	0 0	0 0	0 0	0 0		0 0	10	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	5I	0 0	0 0	0 0	0 0		0 0	10	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
Mean		0	0	0	0	0044	3244	0	0012	0	0	0	0	0	0	0	0	0	0
S12																			
	0A	0 0	0 0	0 0	0 0		0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	0C	0 0	0 0	0 0	0 0		0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	0E	0 0	0 0	0 0	0 0		0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	0G	0 0	0 0	0 0	0 0		0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	0I	0 0	0 0	0 0	0 0		0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	2A	0 0	0 0	0 0	0 0		0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	2C	0 0	0 0	0 0	0 0		0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	2E	0 0	0 0	0 0	0 0		0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	2G	0 0	0 0	0 0	0 0		0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	2I	0 0	0 0	0 0	0 0		0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	4A	0 0	0 0	0 0	0 0		0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	4C	0 0	0 0	0 0	0 0		0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	4E	0 0	0 0	0 0	0 0		0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	4G	0 0	0 0	0 0	0 0		0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	4I	0 0	0 0	0 0	0 0		0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	5A	0 0	0 0	0 0	0 0		0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	5C	0 0	0 0	0 0	0 0		0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	5E	0 0	0 0	0 0	0 0		0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	5G	0 0	0 0	0 0	0 0		0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	5I	0 0	0 0	0 0	0 0		0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
Mean		0	0	0	0	0004	0	0	0	0004	0	0	0	0	0	0004	0	0	0
S14																			
	0A	0 0	0 0	0 0	0 0		00	0 0	0 0	10	00	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0

Atchafalaya Oil Sands Ecological Monitoring Program
August 1983 Survey of Vascular Plant Communities
in Piney Outriggers and Reforested Stands
Species Cover % Volume by Sub m Plots

Stand	Plot	EGAM	GNAC	PYAS	HIBU	SEPU	GLIS	ESMI	ESPU	GRAS	ASSC	BACI	SCPU	JUBA	GLSL	SACA	CAIS	PESA	SMPU
	9C	0 0	0 0	0 0	0 0	10	0 0	0 0	01	01	0 0	0 0	0 0	0.0	0 0	0 0	0.0	0 0	0 0
	9E	0 0	0 0	0 0	0 0	50	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	9G	0 0	0 0	0 0	0 0	50	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	91	0 0	0 0	0 0	0 0	10	10	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	9A	0 0	0 0	0 0	0 0	10	0 0	0 0	10	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	9C	0 0	0 0	0 0	0 0	10	50	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	9E	0 0	0 0	0 0	0 0	50	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	9G	0 0	0 0	0 0	0 0	50	50	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	91	0 0	0 0	0 0	0 0	10	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	9A	0 0	0 0	0 0	0 0	10	10	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	9C	0 0	0 0	0 0	0 0	10	10	0 0	0 0	01	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	9E	0 0	0 0	0 0	0 0	50	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	9G	0 0	0 0	0 0	0 0	50	10	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	91	0 0	0 0	0 0	0 0	10	01	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	9A	0 0	0 0	0 0	0 0	10	10	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	9C	0 0	0 0	0 0	0 0	10	10	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	9E	0 0	0 0	0 0	0 0	10	10	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	9G	0 0	0 0	0 0	0 0	10	10	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	91	0 0	0 0	0 0	0 0	01	10	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
Mean		0	0	0	0	2200	1313	0	0060	0012	0	0	0	0	0	0	0	0	0
S15																			
	9A	01	0 0	0 0	0 0	10	50	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	9C	01	0 0	0 0	0 0	01	50	01	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	9E	01	0 0	0 0	0 0	0 0	50	50	0 0	10	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	9G	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	91	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	9A	0 0	0 0	0 0	0 0	0 0	01	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	9C	0 0	0 0	0 0	0 0	0 0	01	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	9E	0 0	0 0	0 0	0 0	0 0	01	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	9G	0 0	0 0	0 0	0 0	0 0	01	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	91	0 0	0 0	0 0	0 0	0 0	01	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	9A	0 0	0 0	0 0	0 0	0 0	01	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	9C	0 0	0 0	0 0	0 0	0 0	01	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	9E	0 0	0 0	0 0	0 0	0 0	01	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	9G	0 0	0 0	0 0	0 0	0 0	01	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	91	0 0	0 0	0 0	0 0	0 0	01	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
Mean		0012	0200	0	0400	0140	3734	0204	0	0040	0	0	0	0	0	0304	0	0	0
S16																			
	9A	0 0	0 0	0 0	0 0	10	1 00	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	50	0 0	0 0	0 0
	9C	0 0	0 0	0 0	0 0	0 0	1 00	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	50	0 0	0 0	0 0
	9E	0 0	0 0	0 0	0 0	0 0	2 00	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	9G	0 0	0 0	0 0	0 0	0 0	2 00	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	91	0 0	0 0	0 0	0 0	0 0	2 00	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	9A	0 0	0 0	0 0	0 0	0 0	3 00	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	9C	0 0	0 0	0 0	0 0	0 0	3 00	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	9E	0 0	0 0	0 0	0 0	0 0	3 00	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	9G	0 0	0 0	0 0	0 0	0 0	4 00	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	91	0 0	0 0	0 0	0 0	0 0	4 00	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	9A	0 0	0 0	0 0	0 0	0 0	4 00	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	9C	0 0	0 0	0 0	0 0	0 0	7 00	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	9E	0 0	0 0	0 0	0 0	0 0	7 00	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	9G	0 0	0 0	0 0	0 0	0 0	7 00	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	91	0 0	0 0	0 0	0 0	0 0	4 00	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	9A	0 0	0 0	0 0	0 0	0 0	4 00	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	9C	0 0	0 0	0 0	0 0	0 0	10 00	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	9E	0 0	0 0	0 0	0 0	0 0	10 00	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	9G	0 0	0 0	0 0	0 0	0 0	1 00	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	91	0 0	0 0	0 0	0 0	0 0	50	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	10	0 0	0 0	0 0
Mean		0004	0	0004	0	0240	4 400	0004	0	0	0	0	0	0	0	1120	0	0	0

Athabasca Oil Sands Geological Monitoring Program
August 1992 Survey of Vascular Plant Communities
in Pinus Banksiana Reference Stands
Species Cover % Values By Sub m Plots

Stand	Plot	CEBP	BOPA	LYTR	LYSA	BOBT	BOBC	BOBB	BOPR	LYCL	BOAR	PRVI	LIVI	PEBR	BMNI
801h	0A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0S	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	3A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	3C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	3E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	3S	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	31	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4C	0.0	0.0	0.0	0.0	0.0	0.0	0.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4S	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	41	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8S	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	81	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0S	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean		0	0	0	0	0	0	0	0	0	0	0	0	0	0
802h	0A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0S	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	3A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	3C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	3E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	3S	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	31	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4S	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	41	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8S	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	81	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean		0	0	0	0	0	0	0	0	0	0	0	0	0	0
803h	0A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0S	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	3A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	3C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	3E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	3S	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	31	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4S	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	41	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8S	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	81	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean		0	0	0	0	0	0	0	0	0	0	0	0	0	0
804h	0A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0S	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	3A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	3C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	3E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	3S	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	31	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4S	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	41	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8S	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	81	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

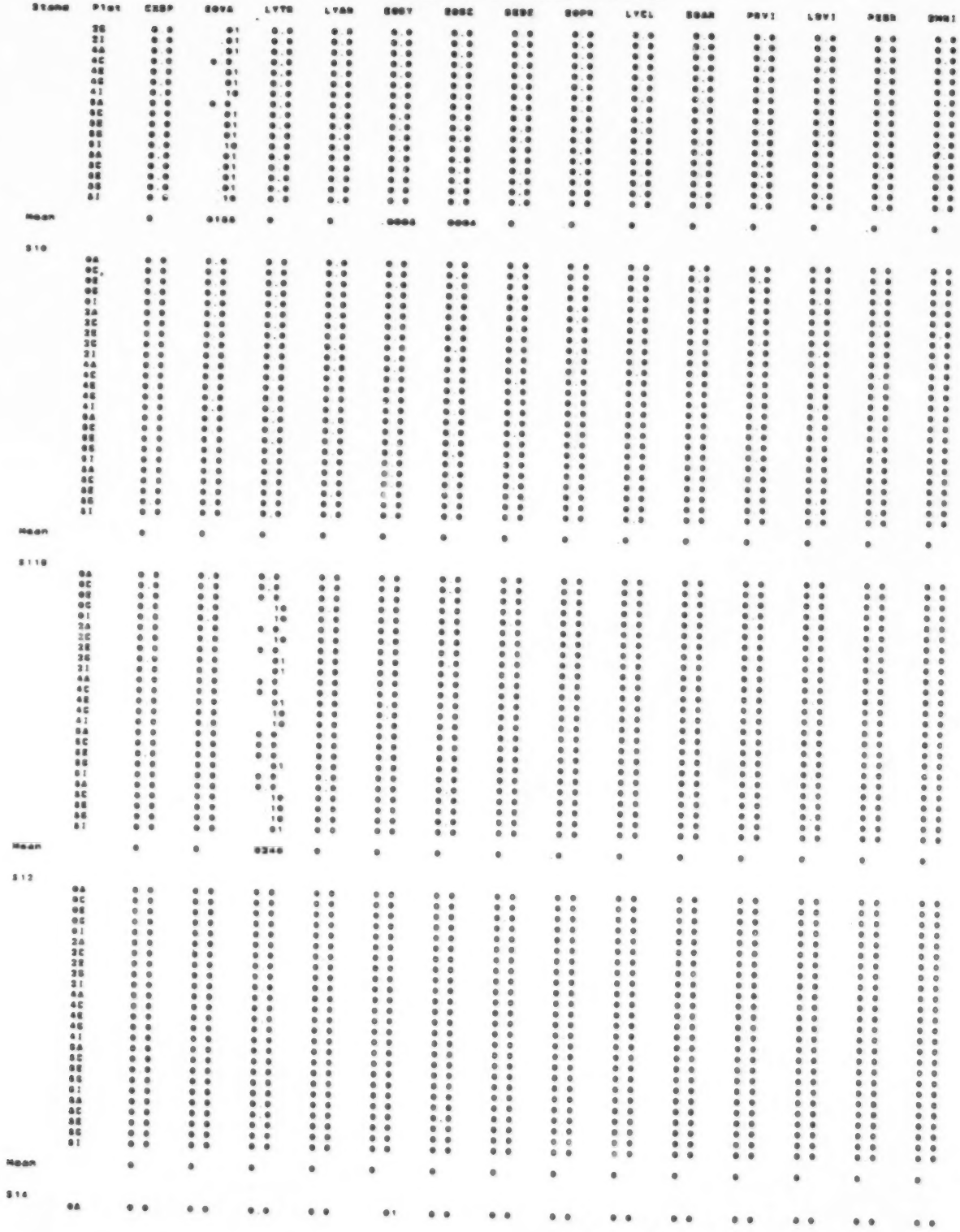
ATMOSPHERIC OIL SANDS Geological Monitoring Program
August 1982 Survey of Vascular Plant Communities
in Plume Simulation Reference Stands
Species Cover % Values by Sub & Plots

Stand	Plot	CEDP	DRYA	LYTR	LYSA	DRYI	DRDI	DRDE	DRPE	LYEL	DRAR	PRYI	LOYI	PGSA	DRHI
	02	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	05	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	01	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mean		0	0	0	0	0	0	0	0	0	0	0	0	0	0
2010															
	0A	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0C	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0E	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	34	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3C	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3E	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	31	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4A	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4C	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4E	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	51	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5A	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5C	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5E	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	61	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mean		0	0	0	0	0	0	0	0	0	0	0	0	0	0
202															
	0A	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0C	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0E	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	34	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3C	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3E	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	31	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4A	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4C	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4E	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	51	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5A	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5C	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5E	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	61	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mean		0	0	0	0	0	0	0	0	0	0	0	0	0	0
203															
	0A	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0C	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0E	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	34	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3C	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3E	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	31	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4A	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4C	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4E	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	51	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5A	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5C	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5E	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	61	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mean		0	0	0	0	0	0	0	0	0	0	0	0	0	0
204															
	0A	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0C	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0E	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	34	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3C	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3E	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	31	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4A	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4C	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4E	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	51	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Athabasca Oil Sands Ecological Monitoring Program
August 1982 Survey of Vascular Plant Communities
in Pinus Banksiana Reference Stands
Species Cover % Values By Sub m Plots

Stand	Plot	CREP	BOVA	LYTR	LYAR	BOBY	BOSC	BEBE	BOPR	LYEL	BOAR	PRVI	LOVI	PEBR	EHNI
	8A	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8C	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8E	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9B	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9D	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9A	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9C	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9E	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mean		0	0	0	0	0	0	0	0	0	0	0	0	0	0
505															
	8A	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8C	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8E	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9B	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9D	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9A	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9C	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9E	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mean		0	0040	0	0	0	0	0	0	0	0	0	0	0	0
507															
	8A	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8C	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8E	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9B	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9D	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9A	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9C	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9E	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mean		0	0004	.0080	0	0	0	0	0	0	0	0	0	0	0
508															
	8A	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8C	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8E	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9B	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9D	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9A	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9C	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9E	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mean		0	0	0	0	0	0	0	0	0	0	.0004	0	0	0
509															
	8A	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8C	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8E	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9B	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9D	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9A	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9C	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9E	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mean		0	0	0	0	0	0	0	0	0	0	0	0	0	0
510															
	8A	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8C	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8E	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9B	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9D	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9A	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9C	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9E	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mean		0	0	0	0	0	0	0	0	0	0	0	0	0	0

Athabasca Oil Sands Geological Monitoring Program
August 1983 Survey of Vascular Plant Communities
in Pingo Complexes Reference Stands
Species Cover % Values By Sub a Plots



Athabasca Oil Sands Ecological Monitoring Program
August 1982 Survey of Vascular Plant Communities
in Pinus Banksiana Reference Stands
Species Cover % Values by 5x5 m Plots

Stand	Plot	CAREX	EQUVA	LYCTR	LYCAN	EQSY	EQSC	EQDE	EQPR	LYCL	EQAR	PRVI	LOVI	PEGR	EMNI
	0C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2A	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	41	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	61	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	81	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean		0	0	.0	.0	.0204	.0	.0	.0	0	0	.0	.0	0	0
S15															
	0A	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	.10	0.0	.01	0.0	0.0
	0C	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0
	0E	0.0	0.0	0.0	0.0	.01	.10	0.0	0.0	0.0	1.00	0.0	0.0	0.0	0.0
	0G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0
	01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0
	2A	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0
	2C	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0
	2E	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0
	2G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	21	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4A	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0
	4C	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0
	4E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0
	4G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0
	41	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0
	6A	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0
	6C	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0
	6E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0
	6G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0
	61	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0
	8A	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0
	8C	.10	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0
	8G	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0
	81	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0
Mean		.0040	.0	.0	.0	.0235	.0080	.0	.0	.0	.1736	0	.0004	0	0
S16															
	0A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0C	0.0	0.0	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0
	0G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2E	0.0	0.0	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4A	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4E	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10
	41	0.0	0.0	2.00	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0
	8A	0.0	0.0	1.00	5.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	0.0	0.0	0.0	2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	81	0.0	0.0	.50	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0
	8A	0.0	0.0	0.0	5.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	0.0	0.0	.10	.10	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	81	0.0	0.0	0.0	0.0	0.0	.01	0.0	.01	0.0	.01	0.0	0.0	0.0	0.0
Mean		0	0	.2440	.5455	0	.0005	0	.0044	.0200	.0044	0	0	.0040	.0040

Athabasca Oil Sands Ecological Monitoring Program
August 1983 Survey of Vascular Plant Communities
in Pinus Banksiana Reference Stands
Species Cover % Values By 5x5 m Plots

Stand	Plot	CASP	EQVA	LYTR	LYAM	EQSY	EQSC	SEDE	EQPR	LYCL	EQAR	PRVI	LOVI	PESR	EMNI
	2C	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2I	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4A	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4E	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4G	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4I	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6C	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6E	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6G	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6I	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8A	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8I	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean		.0	.0185	0	.0	.0005	0004	0	.0	.0	.0	.0	0	.0	0
S10															
	0A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean		0	0	0	0	0	0	0	0	.0	0	0	0	0	0
S11B															
	0A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0I	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2C	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2G	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2I	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4E	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4G	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4I	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6G	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8I	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean		0	0	0240	0	0	0	0	.0	0	0	0	0	0	0
S12															
	0A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean		0	0	0	0	0	0	0	0	0	0	0	0	0	0
S14															
	0A	0.0	0.0	0.0	0.0	01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Athabasca Oil Sands Ecological Monitoring Program
August 1982 Survey of Vascular Plant Communities
in Pinus Banksiana Reference Stands
Species Cover % Values by 5x5 m Plots

Stand	Plot	CEDP	EQVA	LYTR	LYAN	EQSV	EQSC	EQDE	EQPR	LYEL	EQAR	PRVI	LDVI	PEBR	EMNI
	0C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2A	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean		0	0	.0	.0	.0204	.0	.0	.0	0	0	0	.0	0	0
S15															
	0A	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	.10	0.0	.01	0.0	0.0
	0C	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0
	0E	0.0	0.0	0.0	0.0	.01	.10	0.0	0.0	0.0	1.00	0.0	0.0	0.0	0.0
	0G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0
	0I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0
	2A	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0
	2C	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0
	2E	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0
	2G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2I	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4A	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0
	4C	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0
	4E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0
	4G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0
	4I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0
	6A	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0
	6C	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0
	6E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0
	6G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0
	6I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0
	8A	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0
	8C	.10	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0
	8G	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0
	8I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0
Mean		.0046	.0	.0	.0	.0236	.0060	0	.0	.0	.1736	0	.0004	0	0
S16															
	0A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0C	0.0	0.0	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0
	0G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2E	0.0	0.0	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4A	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4E	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10
	4G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0
	4I	0.0	0.0	2.00	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6A	0.0	0.0	1.00	5.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6C	0.0	0.0	0.0	2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6I	0.0	0.0	.50	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0
	8A	0.0	0.0	0.0	5.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0
	8E	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	0.0	0.0	.10	.10	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8I	0.0	0.0	0.0	0.0	0.0	.01	0.0	.01	0.0	.01	0.0	0.0	0.0	0.0
Mean		0	0	.2440	.5480	0	.0006	0	.0044	.0200	.0044	0	0	.0040	.0040

Athabasca Oil Sands Ecological Monitoring Program
August 1993 Survey of Vascular Plant Communities
in Pinus Banksiana Reference Stands
Soil Temperature & Synthetic Variables By Sub m Plots

Stand	Plot	TEMP	TREE	TREERP	SHRUB	SHRUBRP	FORB	FORBRP	GRAM	GRAMRP	PTEE	PTEERP	TOT	TOTRP
S01N														
	0A	57.0	3.00	1	7.21	5	1.23	11	.21	3	0.0	0	12.05	20
	0C	57.0	5.00	1	16.10	5	2.05	13	1.01	3	0.0	0	26.16	22
	0E	56.0	3.00	1	61.00	7	2.63	5	.81	3	0.0	0	67.23	17
	0G	58.0	3.00	1	6.00	3	2.34	9	1.02	4	0.0	0	13.36	17
	0I	58.0	2.00	1	8.00	4	3.44	11	1.11	4	0.0	0	13.55	20
	2A	56.0	4.00	1	20.20	5	1.91	12	.21	4	0.0	0	26.42	22
	2C	56.0	4.00	1	10.00	4	1.80	10	1.20	3	0.0	0	25.00	14
	2E	56.0	7.00	1	10.20	4	1.51	12	.70	3	0.0	0	28.41	20
	2G	56.0	7.00	1	4.70	4	1.04	10	.30	3	0.0	0	13.04	16
	2I	56.0	3.00	1	2.01	3	1.04	10	.62	4	0.0	0	7.67	18
	4A	57.0	3.00	1	7.60	5	1.94	10	.61	3	0.0	0	13.15	18
	4C	58.0	.10	1	8.10	4	.70	12	.61	3	.01	1	9.52	21
	4E	58.0	5.00	1	4.50	2	1.03	8	.51	3	0.0	0	12.04	16
	4G	58.0	15.00	1	3.50	4	.55	8	.03	3	0.0	0	19.28	16
	4I	57.0	10.00	1	5.00	4	.55	10	.61	3	0.0	0	17.16	16
	6A	54.0	.50	1	3.10	4	1.74	12	.30	3	0.0	0	4.64	20
	6C	57.0	7.00	1	3.00	3	.91	8	.20	3	0.0	0	10.11	13
	6E	57.0	5.00	1	4.00	1	.04	4	.11	2	0.0	0	9.15	8
	6G	58.0	1.00	1	7.00	3	.73	6	.11	2	0.0	0	13.83	11
	6I	56.0	3.00	1	5.00	4	.63	7	1.81	4	0.0	0	10.44	16
	8A	54.0	4.00	1	7.00	3	1.01	7	.70	3	0.0	0	12.71	14
	8C	56.0	1.00	1	4.10	3	.53	8	.30	3	0.0	0	4.93	15
	8E	54.0	10.00	1	1.00	3	0.0	0	.10	1	0.0	0	10.70	5
	8G	54.0	20.00	1	4.50	4	.63	7	.30	3	0.0	0	25.63	15
	8I	54.0	3.00	1	10.00	2	1.30	9	.70	3	0.0	0	24.00	15
Mean		57.0	5.8240	1.00	10.8888	3.72	1.2384	8.72	.8888	2.88	.0004	.04	18.8872	10.44
S02N														
	0A	57.0	17.00	1	6.50	3	.82	3	.02	2	0.0	0	22.04	8
	0C	56.0	12.00	1	3.50	3	.82	4	.11	2	0.0	0	16.23	10
	0E	57.0	20.00	1	2.10	4	.01	1	.20	2	0.0	0	22.31	6
	0G	58.0	11.00	1	6.00	2	1.10	2	.10	1	0.0	0	18.20	7
	0I	57.0	15.00	1	2.01	2	.51	2	.01	1	0.0	0	17.53	7
	2A	56.0	7.00	1	3.00	3	.88	4	.10	1	0.0	0	10.98	8
	2C	58.0	12.00	1	1.50	2	.10	1	.11	2	0.0	0	13.81	7
	2E	58.0	12.00	1	1.50	2	0.0	0	.10	1	0.0	0	13.60	4
	2G	58.0	15.00	1	.50	1	.10	1	0.0	0	0.0	0	15.60	3
	2I	56.0	15.00	1	.10	1	.10	1	.01	1	0.0	0	15.21	4
	4A	57.0	16.00	1	.10	1	.10	1	.10	1	0.0	0	16.30	4
	4C	57.0	7.00	1	6.50	3	.10	1	0.0	0	0.0	0	13.60	4
	4E	58.0	15.00	1	1.30	2	0.0	0	0.0	0	0.0	0	16.80	3
	4G	57.0	16.00	1	.10	1	.01	1	0.0	0	0.0	0	16.11	3
	4I	57.0	5.00	1	3.00	2	.82	4	.10	1	0.0	0	11.72	8
	6A	55.0	5.00	1	4.00	3	.51	2	.10	1	0.0	0	13.21	7
	6C	57.0	20.00	1	.10	1	0.0	0	0.0	0	0.0	0	20.10	2
	6E	57.0	15.00	1	.10	1	.21	4	0.0	0	0.0	0	15.41	5
	6G	58.0	13.00	1	.50	2	.01	1	0.0	0	0.0	0	13.51	4
	6I	56.0	17.00	1	1.20	3	.72	6	.20	2	0.0	0	18.12	11
	8A	58.0	18.00	1	2.10	4	.30	2	.01	1	0.0	0	20.31	8
	8C	56.0	20.00	1	.20	2	.30	2	.01	1	0.0	0	20.61	5
	8E	57.0	15.00	1	1.10	3	.11	2	.01	1	0.0	0	16.22	7
	8G	57.0	12.00	1	1.00	3	.13	4	.02	2	0.0	0	13.75	10
	8I	57.0	10.00	1	2.10	4	1.10	2	.02	2	0.0	0	13.22	9
Mean		56.9	13.3300	1.00	1.9884	2.40	.3192	2.00	.0833	1.00	0.0	0.0	15.2886	6.40
S03N														
	0A	57.0	15.00	1	4.00	2	1.73	7	.13	4	0.0	0	20.86	14
	0C	57.0	25.00	1	4.00	1	.42	7	.11	2	0.0	0	29.54	11
	0E	57.0	10.00	1	15.00	1	.22	4	.11	2	0.0	0	25.33	8
	0G	56.0	.50	1	5.01	2	1.93	5	.21	3	0.0	0	12.74	11
	0I	58.0	30.00	1	5.00	1	.33	5	.11	2	0.0	0	35.44	10
	2A	58.0	4.00	1	1.50	2	1.25	5	.11	2	0.0	0	6.86	14
	2C	57.0	20.00	1	3.00	1	.31	4	.02	2	0.0	0	23.33	8
	2E	57.0	15.00	1	1.00	1	.13	4	.20	2	0.0	0	16.33	8
	2G	56.0	17.00	1	1.20	3	1.11	4	.11	2	0.0	0	19.42	10
	2I	56.0	15.00	1	15.50	2	.33	4	.10	1	0.0	0	30.93	8
	4A	58.0	5.00	1	3.01	2	.32	5	.12	3	0.0	0	8.45	11
	4C	61.0	7.00	1	3.00	1	.12	3	.02	2	0.0	0	9.14	7
	4E	58.0	17.00	1	4.00	1	.08	8	.11	2	0.0	0	21.18	8
	4G	58.0	17.00	1	3.01	2	0.0	0	.10	1	0.0	0	20.11	4
	4I	58.0	5.00	1	4.01	2	1.71	5	.30	3	0.0	0	14.02	11
	6A	60.0	17.00	1	2.00	1	.24	8	.10	1	0.0	0	19.34	3
	6C	62.0	3.00	1	.50	1	.01	8	.20	2	0.0	0	4.21	10
	6E	60.0	10.00	1	.10	1	.31	4	.02	2	0.0	0	10.43	8
	6G	59.0	5.00	1	2.00	1	.22	4	.11	2	0.0	0	5.33	8
	6I	60.0	3.00	1	.50	2	.50	1	.01	1	0.0	0	4.11	5
	8A	58.0	7.10	2	2.00	1	.60	4	.11	2	0.0	0	10.01	8
	8C	60.0	11.00	1	2.10	2	.32	8	.02	2	0.0	0	13.44	10
	8E	58.0	12.00	1	4.00	1	1.21	8	.11	2	0.0	0	17.33	9
	8G	59.0	7.00	1	2.00	1	.31	4	.13	3	0.0	0	9.43	8
	8I	58.0	15.00	1	2.00	1	.63	4	.11	2	0.0	0	17.73	8
Mean		58.7	11.6440	1.04	3.5616	1.44	.5788	4.80	.1188	2.08	0.0	0.0	15.9180	9.16
S04N														
	0A	61.0	25.10	2	6.00	2	1.03	9	.01	1	0.0	0	32.14	14
	0C	61.0	3.00	1	4.10	3	1.83	8	.01	1	0.0	0	8.84	14
	0E	59.0	5.00	1	6.20	4	2.61	9	.50	1	0.0	0	14.31	15
	0G	60.0	2.00	1	3.01	2	.53	6	1.00	1	0.0	0	6.54	12
	0I	59.0	13.00	1	4.00	1	1.03	9	.02	2	0.0	0	17.06	13
	2A	58.0	10.00	1	3.00	2	1.01	7	.10	1	0.0	0	15.11	11
	2C	63.0	1.00	1	2.50	3	1.33	8	.01	1	0.0	0	4.84	12
	2E	62.0	.30	1	3.10	2	.12	3	.01	1	0.0	0	4.33	7
	2G	62.0	36.00	1	.50	2	.73	8	.10	1	0.0	0	31.43	10
	2I	62.0	2.00	1	.50	1	1.14	7	.02	2	0.0	0	3.66	11
	4A	59.0	30.00	1	.50	1	.14	8	.01	1	0.0	0	29.65	8
	4C	59.0	25.00	1	2.00	1	.42	8	.10	1	0.0	0	28.52	9
	4E	62.0	10.00	1	1.00	3	1.91	8	.10	1	0.0	0	13.01	11
	4G	61.0	5.00	1	3.00	2	2.22	8	1.00	1	0.0	0	13.22	10
	4I	62.0	5.00	1	3.10	2	.12	3	.02	2	0.0	0	8.24	8
	6A	62.0	7.00	1	1.50	2	.61	3	.01	1	0.0	0	9.13	7
	6C	63.0	5.00	1	3.00	1	.31	4	.02	2	0.0	0	8.33	8
	6E	62.0	.10	1	3.01	3	1.23	8	.10	1	0.0	0	4.43	10
	6G	62.0	10.00	1	2.50	2	3.04	6	.50	2	0.0	0	18.24	12
	6I	60.0	3.00	1	2.00	1	1.30	5	.01	1	0.0	0	6.31	8
	8A	59.0	.4.00	1	5.50	2	2.73	7	.50	1	0.0	0	12.73	11
	8C	60.0	15.00	1	5.00	2	.12	3	0.0	0	0.0	0	20.12	6

Athabasca Oil Sands Ecological Monitoring Program
August 1982 Survey of Vascular Plant Communities
in Pinus banksiana Reference Stands
Soil Temperature & Synthetic Variables By 5x5 m Plots

Stand	Plot	TEMP	TREE	TREERP	SHRUB	SHRUBRP	FORB	FORBRP	GRAM	GRAMRP	PTER	PTERRP	TOT	TOTRP
	8E	81.0	12.00	1	7.00	1	.13	3	0.0	0	0.0	0	19.12	5
	8C	83.0	6.00	1	2.01	2	.74	7	.01	1	0.0	0	10.76	11
	81	81.0	15.00	1	1.00	1	.04	5	.02	2	0.0	0	16.06	10
Mean		81.3	10.1250	1.04	3.0732	1.92	1.0830	5.00	.1713	1.16	0.0	0.0	14.4844	10.12
S018														
	0A	83.0	.01	1	1.11	3	1.03	8	1.01	3	0.0	0	3.18	18
	0C	83.0	0.0	0	1.30	4	1.38	11	.70	3	0.0	0	3.38	18
	0E	83.0	.01	1	3.30	4	4.72	11	.80	1	0.0	0	4.43	17
	0G	84.0	.01	1	3.11	5	2.84	12	.80	2	0.0	0	8.85	20
	01	83.0	.01	1	1.51	3	1.93	9	1.10	2	0.0	0	4.55	15
	2A	84.0	.01	1	1.00	2	.84	8	1.10	2	0.0	0	2.95	13
	2C	83.0	.01	1	2.11	4	.87	13	1.00	2	0.0	0	4.00	19
	2E	85.0	.10	1	2.70	4	5.23	10	.71	4	0.0	0	8.74	18
	2G	85.0	0.0	0	2.10	3	2.41	6	.80	2	0.0	0	5.11	13
	21	83.0	.01	1	1.30	3	1.52	9	.82	3	0.0	0	3.26	16
	4A	84.0	.01	1	.80	1	1.24	7	.80	1	0.0	0	2.25	10
	4C	84.0	.01	1	.30	2	1.30	8	.70	3	0.0	0	3.11	14
	4E	0.0	0.0	0	.11	2	.83	6	.51	2	0.0	0	1.55	12
	4G	0.0	.01	1	.70	3	.83	8	1.00	2	0.0	0	2.24	14
	41	0.0	.01	1	.72	5	1.33	8	1.00	2	0.0	0	3.08	16
	8A	84.0	.01	1	.10	1	1.11	8	.70	3	0.0	0	1.92	13
	8C	84.0	.01	1	1.10	2	.00	0	.70	3	0.0	0	2.71	15
	8E	83.0	.01	1	.70	3	1.32	10	1.10	3	0.0	0	3.03	17
	8G	84.0	.01	1	1.30	4	3.21	11	1.10	2	0.0	0	5.62	16
	81	84.0	.01	1	.80	2	2.41	8	.10	1	0.0	0	3.12	13
	8A	84.0	0.0	0	1.20	3	1.31	10	1.80	3	0.0	0	4.01	15
	8C	84.0	.01	1	1.80	3	1.80	8	1.10	3	0.0	0	3.31	13
	8E	84.0	.01	1	1.10	2	2.41	8	.80	2	0.0	0	4.12	13
	8G	84.0	0.0	0	.80	2	2.51	8	.70	3	0.0	0	3.81	14
	81	84.0	0.0	0	.31	4	2.02	10	.80	2	0.0	0	3.93	16
Mean		83.7	.0112	.76	1.2832	3.88	1.8762	9.20	.7800	2.32	0.0	0.0	3.8788	15.16
S03														
	0A	86.0	40.00	1	.10	1	0.0	0	0.0	0	0.0	0	40.10	2
	0C	87.0	30.00	1	1.01	2	.13	3	.01	1	0.0	0	31.14	7
	0E	87.0	25.00	1	2.01	2	0.0	0	.01	1	0.0	0	28.02	3
	0G	87.0	20.00	1	0.0	0	.01	1	.01	1	0.0	0	20.02	3
	01	87.0	30.00	1	1.00	1	.01	1	.01	1	0.0	0	31.02	4
	2A	88.0	30.00	1	2.00	1	0.0	0	.01	1	0.0	0	32.01	3
	2C	87.0	35.00	1	3.00	1	0.0	0	0.0	0	0.0	0	38.00	2
	2E	87.0	30.00	1	8.00	1	.10	1	0.0	0	0.0	0	38.10	3
	2G	88.0	35.00	1	1.00	1	0.0	0	.01	1	0.0	0	36.01	3
	21	88.0	30.00	1	2.00	1	0.0	0	.01	1	0.0	0	32.01	3
	4A	88.0	25.00	1	.10	1	0.0	0	0.0	0	0.0	0	25.10	2
	4C	88.0	35.00	1	3.00	1	0.0	0	0.0	0	0.0	0	38.00	2
	4E	88.0	30.00	1	3.00	1	0.0	0	0.0	0	0.0	0	33.00	2
	4G	88.0	25.00	1	.10	1	0.0	0	0.0	0	0.0	0	25.10	2
	41	88.0	30.00	1	2.00	1	0.0	0	0.0	0	0.0	0	32.00	2
	8A	88.0	30.00	1	.80	1	0.0	0	.01	1	0.0	0	30.81	3
	8C	88.0	25.00	1	.80	1	0.0	0	0.0	0	0.0	0	25.80	2
	8E	88.0	35.00	1	1.00	1	0.0	0	0.0	0	0.0	0	36.00	2
	8G	88.0	30.00	1	3.00	1	0.0	0	.10	1	0.0	0	33.10	3
	81	88.0	25.00	1	0.0	0	0.0	0	0.0	0	0.0	0	25.00	1
	8A	88.0	30.00	1	.80	1	0.0	0	.01	1	0.0	0	30.81	3
	8C	88.0	30.00	1	1.00	1	0.0	0	0.0	0	0.0	0	31.00	2
	8E	88.0	30.00	1	2.00	1	0.0	0	0.0	0	0.0	0	32.00	2
	8G	87.0	35.00	1	2.00	1	0.0	0	.01	1	0.0	0	37.01	3
	81	87.0	30.00	1	4.00	1	.03	3	0.0	0	0.0	0	34.03	5
Mean		87.7	29.8000	1.00	1.8726	1.00	.0108	.36	.0080	.44	0.0	0.0	30.4816	2.80
S03														
	0A	83.0	12.80	2	38.00	4	10.01	11	1.10	3	0.0	0	62.61	24
	0C	83.0	5.00	1	36.50	7	3.32	9	.70	3	3.00	1	38.52	21
	0E	85.0	12.00	1	38.20	8	5.43	10	.21	3	1.00	1	47.84	24
	0G	83.0	5.00	3	31.00	8	4.84	8	1.80	3	0.0	0	42.14	21
	01	83.0	10.10	2	38.20	8	2.81	8	1.00	1	0.0	0	42.81	17
	2A	83.0	11.00	2	48.00	7	3.81	8	1.10	3	0.0	0	64.81	20
	2C	83.0	15.80	2	43.00	8	3.03	10	1.10	3	0.0	0	63.83	21
	2E	84.0	12.10	2	30.30	8	2.71	11	.82	3	0.0	0	48.13	21
	2G	83.0	35.00	1	33.10	8	5.80	8	.21	3	0.0	0	84.11	18
	21	85.0	10.00	1	30.10	8	5.33	9	.30	3	0.0	0	45.72	19
	4A	83.0	5.80	3	35.80	7	5.72	10	.80	3	0.0	0	80.42	21
	4C	84.0	7.00	1	32.00	8	5.24	10	.11	2	0.0	0	44.35	19
	4E	83.0	15.00	1	40.00	7	4.71	7	.20	2	0.0	0	59.91	17
	4G	84.0	5.00	1	58.80	8	5.80	9	.80	2	0.0	0	73.70	19
	41	84.0	15.01	2	30.80	6	5.11	8	.80	1	0.0	0	82.22	18
	8A	84.0	12.80	2	54.00	7	5.32	12	.20	2	0.0	0	73.02	23
	8C	81.0	15.00	1	34.10	7	5.20	9	.20	2	0.0	0	54.50	18
	8E	85.0	7.00	1	37.80	8	5.11	11	.80	2	0.0	0	43.31	20
	8G	85.0	.80	1	30.10	8	3.81	10	.20	2	0.0	0	34.31	18
	81	71.0	5.00	1	33.10	8	3.00	9	.01	1	0.0	0	38.11	18
	8A	84.0	5.00	1	34.00	8	3.80	8	.02	2	0.0	0	42.82	18
	8C	84.0	7.00	1	48.10	8	3.10	4	.10	1	0.0	0	60.30	11
	8E	84.0	5.00	1	11.80	3	2.00	4	.11	2	0.0	0	18.61	10
	8G	84.0	2.00	1	88.80	8	3.11	8	.21	3	0.0	0	84.62	19
	81	81.0	5.80	2	48.00	8	2.70	8	.70	3	0.0	0	88.80	19
Mean		83.8	9.4884	1.44	35.7880	8.16	4.8844	8.28	.4840	2.24	.1800	.08	80.7448	18.20
S04														
	0A	87.0	7.00	1	10.80	5	.70	3	.21	3	0.0	0	18.81	12
	0C	86.0	10.00	1	11.00	4	1.40	5	.11	2	0.0	0	22.61	12
	0E	87.0	12.00	1	10.80	4	3.33	6	.11	2	0.0	0	25.84	12
	0G	86.0	5.00	1	12.01	5	1.81	7	.11	2	0.0	0	18.83	15
	01	86.0	5.00	1	4.81	5	.32	6	.30	2	0.0	0	10.03	13
	2A	87.0	15.00	1	12.80	4	4.81	6	.11	2	0.0	0	33.22	11
	2C	87.0	4.00	1	23.00	4	3.71	6	.60	2	0.0	0	31.31	13
	2E	87.0	20.00	1	19.10	5	4.10	6	.12	2	0.0	0	45.32	14
	2G	87.0	5.00	1	19.80	5	1.83	5	.01	2	0.0	0	28.84	13
	21	87.0	4.00	1	12.01	5	2.70	5	.11	2	0.0	0	20.82	13
	4A	86.0	10.00	1	37.80	7	3.71	5	1.20	4	0.0	0	42.61	16
	4C	87.0	5.00	1	18.80	5	5.11	6	.21	2	0.0	0	28.32	13
	4E	86.0	17.00	1	32.80	4	1.11	4	.21	2	0.0	0	80.82	12
	4G	86.0	4.00	1	18.80	4	2.21	6	.20	2	0.0	0	31.81	13
	41	86.0	20.00	1	18.10	5	2.80	4	.20	2	0.0	0	41.80	12

Atmospheric Oil Sands Ecological Monitoring Program
August 1983 Survey of Vascular Plant Communities
in Pinus banksiana Reference Stands
Soil Temperature & Synthetic Variables by SNS in Plots

Stand	Plot	TEMP	TREE	TREERP	SHRUB	SHRUBRP	FORB	FORBRP	GRAM	GRAMRP	PTER	PTERRP	TOT	TOTRP
	8A	88.0	4.00	1	11.10	4	1.10	3	.21	3	0.0	0	20.41	11
	8C	87.0	20.00	1	15.00	4	1.71	5	.32	4	0.0	0	36.03	14
	8E	87.0	5.00	1	10.30	6	1.72	6	.12	3	0.0	0	22.14	10
	8G	88.0	10.00	1	30.00	5	1.00	5	.12	3	0.0	0	43.43	14
	81	85.0	20.00	1	10.00	4	0.03	5	.30	3	0.0	0	43.03	13
	8A	88.0	10.00	1	10.10	5	.61	5	.22	4	0.0	0	33.13	15
	8C	83.0	10.00	1	13.00	4	1.71	5	.30	3	0.0	0	25.51	12
	8E	84.0	5.00	1	10.00	7	2.21	5	.21	3	0.0	0	24.02	17
	8G	84.0	10.00	1	40.10	5	3.71	5	.21	3	0.0	0	88.02	18
	81	84.0	15.00	1	30.70	5	48.71	5	.01	3	0.0	0	95.03	18
Mean		85.2	10.0000	1.00	16.1172	4.80	4.3540	5.24	.2002	3.72	0.0	0.0	33.3004	13 76
805														
	8A	88.0	35.00	1	8.80	3	.02	4	.02	2	0.0	0	33.14	10
	8C	88.0	10.00	1	13.00	4	.80	5	.10	2	0.0	0	23.80	10
	8E	88.0	4.00	1	10.80	5	.73	5	.02	2	0.0	0	26.24	12
	8G	88.0	15.00	1	22.61	5	2.13	5	.11	2	0.0	0	40.05	15
	81	86.0	30.00	1	8.70	5	.16	5	.02	2	0.0	0	38.05	14
	8A	87.0	15.00	1	10.10	4	.71	4	.11	2	0.0	0	26.02	11
	8C	87.0	15.00	1	10.01	5	.81	5	.02	2	0.0	0	25.84	10
	8E	87.0	20.00	1	20.50	5	.81	5	.01	2	0.0	0	50.02	10
	8G	87.0	15.00	1	27.50	5	.81	5	.02	2	0.0	0	48.13	11
	81	86.0	4.00	1	14.50	4	1.22	5	.02	2	0.0	0	23.74	12
	4A	88.0	22.00	1	10.50	5	1.11	5	.01	1	0.0	0	35.02	8
	4C	86.0	20.00	1	33.50	5	1.10	5	.10	1	0.0	0	53.70	8
	4E	87.0	25.00	1	34.50	5	.71	4	.10	2	0.0	0	60.41	11
	4G	88.0	17.00	1	41.40	7	.80	5	.11	2	0.0	0	59.11	12
	41	88.0	17.00	1	24.10	4	1.80	4	.02	2	0.0	0	42.02	12
	8A	88.0	4.00	1	30.02	5	.12	4	.02	2	.10	1	24.27	13
	8C	87.0	4.00	1	8.10	4	.80	4	.02	2	0.0	0	12.82	11
	8E	88.0	4.00	1	22.80	5	.71	4	.11	2	0.0	0	27.33	12
	8G	86.0	4.00	1	11.80	4	.84	4	.01	1	0.0	0	16.35	12
	81	88.0	15.00	1	10.00	3	.33	4	.01	1	0.0	0	25.34	11
	8A	88.0	20.00	1	20.10	4	1.81	4	.01	1	0.0	0	47.02	10
	8C	88.0	20.00	1	10.10	4	.81	3	.01	1	0.0	0	30.02	10
	8E	84.0	25.00	1	24.01	5	.20	3	.02	1	0.0	0	49.23	10
	8G	86.0	5.00	1	17.70	5	.70	3	.10	2	0.0	0	23.50	10
	81	86.0	7.00	1	6.10	4	.81	3	.02	2	0.0	0	16.03	13
Mean		87.6	15.2400	1.00	18.1100	4.68	.7772	3.92	.0488	1.84	.0040	.04	35.1680	11 26
807														
	8A	88.0	12.00	1	17.20	6	2.38	10	.71	4	.50	1	32.77	32
	8C	88.0	15.01	2	14.80	6	1.42	8	.02	3	.01	0	31.06	18
	8E	88.0	12.00	1	16.80	7	.82	8	.02	3	0.0	0	31.44	16
	8G	88.0	15.00	1	18.01	7	.83	8	.03	3	0.0	0	32.86	17
	81	88.0	7.00	1	13.71	6	.60	8	.01	1	0.0	0	21.18	17
	2A	88.0	8.00	1	20.10	6	2.72	8	.71	4	0.0	0	32.53	14
	2C	88.0	12.00	1	28.80	7	2.80	8	.21	3	.01	1	46.51	18
	2E	88.0	11.00	1	35.00	7	2.34	8	.02	2	.01	1	39.36	21
	2G	88.0	7.00	1	9.80	6	1.41	7	.02	2	0.0	0	17.93	16
	21	88.0	10.00	1	8.80	6	.88	8	.02	2	0.0	0	17.37	16
	4A	88.0	8.00	1	11.31	6	1.83	8	1.01	3	.10	1	33.04	17
	4C	88.0	10.00	1	8.83	7	2.42	8	.11	3	0.0	0	32.06	17
	4E	88.0	10.00	1	21.10	7	3.80	8	.10	2	0.0	0	34.70	17
	4G	88.0	15.00	1	8.20	6	3.61	8	.03	3	0.0	0	33.83	16
	41	88.0	8.00	1	14.10	6	3.01	8	.21	3	.50	1	31.83	18
	8A	88.0	25.00	1	8.00	6	2.40	8	.30	3	.10	1	35.80	18
	8C	88.0	30.00	1	10.10	6	2.82	8	.20	3	0.0	0	53.33	17
	8E	88.0	25.00	1	13.10	6	6.00	7	.11	3	0.0	0	63.31	16
	8G	88.0	15.00	1	13.00	4	3.71	6	.12	3	0.0	0	35.83	16
	81	88.0	25.00	1	10.00	4	3.10	6	.10	3	0.0	0	38.80	14
	8A	88.0	25.00	1	25.70	7	1.70	6	.80	3	.50	1	58.00	18
	8C	88.0	25.00	1	15.10	6	4.02	6	.30	3	0.0	0	64.03	18
	8E	88.0	20.00	1	8.10	5	.81	6	.10	3	0.0	0	38.01	16
	8G	88.0	25.00	1	10.00	7	3.80	7	.70	3	0.0	0	48.00	18
	81	88.0	20.00	1	8.70	6	3.40	7	.11	3	0.0	0	32.21	16
Mean		88.0	15.7304	1.04	14.8430	5.92	2.3504	7.58	.2300	3.40	.0004	.24	33.3400	17 16
503														
	8A	88.0	5.00	1	8.00	4	1.21	5	.11	3	0.0	0	13.33	12
	8C	88.0	15.00	1	4.00	4	1.22	5	.01	2	0.0	0	31.23	12
	8E	88.0	3.00	1	8.00	4	1.23	5	.02	2	0.0	0	13.05	12
	8G	88.0	4.00	1	8.11	4	2.71	5	.10	2	0.0	0	11.02	12
	81	88.0	7.00	1	3.00	4	1.00	5	.02	2	0.0	0	10.02	7
	2A	88.0	15.00	1	8.00	3	1.13	5	.01	2	0.0	0	25.14	10
	2C	88.0	15.00	1	8.00	4	1.81	5	.10	2	0.0	0	26.41	10
	2E	88.0	5.00	1	8.00	4	1.70	5	.12	2	0.0	0	13.33	12
	2G	88.0	3.00	1	4.00	3	1.23	5	.03	2	0.0	0	7.26	12
	21	88.0	5.00	1	3.00	3	2.01	5	.03	2	0.0	0	10.01	8
	4A	88.0	14.00	1	4.00	3	2.01	5	.02	2	0.0	0	14.03	12
	4C	88.0	14.00	1	8.00	5	1.70	5	.01	2	0.0	0	23.71	12
	4E	88.0	4.00	1	4.00	4	2.20	5	.01	2	0.0	0	10.01	11
	4G	88.0	10.00	1	3.00	3	.72	5	.02	2	0.0	0	13.04	11
	41	88.0	7.00	1	3.00	3	.70	5	.10	2	.50	1	8.70	8
	8A	88.0	7.00	1	2.00	4	.80	5	.02	2	0.0	0	4.82	12
	8C	88.0	3.00	1	2.00	4	2.22	5	.01	2	0.0	0	8.04	12
	8E	88.0	20.10	2	3.00	4	.72	5	.01	1	0.0	0	33.04	13
	8G	88.0	3.00	1	2.20	3	.60	5	.01	1	0.0	0	6.01	9
	81	88.0	5.00	1	8.00	3	1.60	5	.01	1	0.0	0	14.01	10
	8A	88.0	10.00	1	1.00	3	.42	5	.02	2	0.0	0	12.01	11
	8C	88.0	7.00	1	7.00	4	.11	5	.02	2	0.0	0	21.04	11
	8E	88.0	3.00	1	4.00	3	.71	5	.01	1	0.0	0	17.13	12
	8G	88.0	3.00	1	3.00	3	1.04	5	.01	1	0.0	0	7.05	11
	81	88.0	17.00	1	5.00	3	1.34	5	.01	1	0.0	0	33.05	14
Mean		88.0	7.0400	1.04	4.0244	3.48	1.0400	5.10	.0208	1.40	0.0	0.0	13.7302	11 04
509														
	8A	88.0	35.00	1	35.00	5	.03	4	.03	4	.01	1	61.25	19
	8C	87.0	10.00	1	12.00	4	.03	4	.03	4	0.0	0	38.25	19
	8E	88.0	12.00	1	24.00	4	.03	4	.03	3	.01	1	38.05	20
	8G	87.0	10.00	1	12.00	4	.03	4	.03	3	.01	1	38.05	20
	81	87.0	7.00	2	21.00	4	.03	4	.03	3	.01	1	38.05	20
	2A	83.0	20.00	1	23.00	5	.04	4	.04	3	.01	1	38.05	22
	2C	88.0	10.00	1	27.00	5	.03	4	.03	3	.01	1	75.05	17
	2E	87.0	5.00	1	10.20	5	.24	5	.72	3	.01	1	40.05	21
													10.17	23

Athabasca Oil Sands Ecological Monitoring Program
August 1982 Survey of Vascular Plant Communities
in Pinus Banksiana Reference Stands
Soil Temperature & Synthetic Variables By SMS m Plots

Stand	Plot	TEMP	TREE	TREERP	SHRUB	SHRUBRP	FORB	FORBRP	GRAM	GRAMRP	PTER	PTERRP	TOT	TOTRP
	2C	55.0	2.00	1	27.00	6	3.84	5	2.02	5	.01	1	34.87	22
	2I	55.0	10.00	1	23.50	5	3.31	5	1.13	4	.01	1	28.05	20
	4A	53.0	5.00	1	42.50	8	1.05	3	.52	4	.01	1	52.28	17
	4C	55.0	17.00	2	21.00	5	.52	4	.33	3	0.0	0	38.85	17
	4E	55.0	15.00	1	25.00	6	1.81	11	3.21	4	.01	1	45.03	23
	4G	54.0	15.00	1	34.00	8	1.00	5	2.22	5	.01	1	52.03	18
	4I	55.0	20.00	1	34.50	7	1.10	7	.80	5	.10	1	56.50	21
	6A	55.0	20.00	1	13.50	5	1.01	7	.71	4	0.0	0	35.22	17
	6C	55.0	30.00	1	25.00	6	3.81	8	1.40	5	.01	1	61.33	26
	6E	55.0	15.00	1	23.00	5	3.41	12	2.30	4	.01	1	43.72	23
	6G	55.0	15.10	2	22.00	6	.93	5	1.81	5	.01	1	40.45	23
	6I	55.0	7.00	1	26.00	5	5.31	9	1.30	5	.10	1	39.71	21
	8A	55.0	3.00	1	15.10	4	3.01	11	.80	5	.01	1	22.02	22
	8C	55.0	4.10	2	24.50	4	3.51	10	.71	4	.01	1	31.83	21
	8E	54.0	30.10	2	37.00	8	3.40	7	.80	4	.01	1	71.31	19
	8G	56.0	7.00	1	30.10	4	3.90	12	1.10	3	.01	1	41.11	21
	8I	57.0	3.10	2	25.00	4	2.61	10	.70	3	.10	1	34.91	20
Mean		55.0	13.0000	1.24	29.0040	5.04	2.2000	8.28	1.1012	4.04	.0200	.02	42.3012	20.12
S10														
	0A	57.0	10.00	1	8.00	3	3.00	1	0.0	0	0.0	0	21.00	5
	0C	55.0	10.00	1	15.10	3	0.0	0	0.0	0	0.0	0	28.10	4
	0E	57.0	5.00	1	28.10	4	3.80	3	.01	1	0.0	0	36.71	8
	0G	55.0	5.00	1	30.10	4	2.13	7	.01	1	0.0	0	38.24	13
	0I	55.0	12.00	1	28.10	4	2.11	8	.01	1	0.0	0	43.22	12
	2A	55.0	5.00	1	15.00	3	2.00	1	0.0	0	0.0	0	25.00	5
	2C	55.0	4.00	1	23.00	3	.30	2	.01	1	0.0	0	28.31	7
	2E	55.0	15.00	1	5.50	3	.11	2	0.0	0	0.0	0	20.61	5
	2G	55.0	5.10	2	12.10	4	1.00	1	.01	1	0.0	0	22.21	8
	2I	55.0	17.00	1	3.50	3	.01	1	0.0	0	0.0	0	20.51	5
	4A	55.0	17.00	1	11.10	3	0.0	0	0.0	0	0.0	0	28.10	4
	4C	55.0	20.00	1	18.00	3	1.10	3	0.0	0	0.0	0	39.10	7
	4E	55.0	.50	1	15.00	3	2.11	3	.01	1	0.0	0	15.62	6
	4G	55.0	3.00	1	9.00	3	.02	2	.01	1	0.0	0	12.03	7
	4I	55.0	7.00	1	20.00	3	.11	2	.01	1	0.0	0	27.12	7
	6A	55.0	5.00	1	15.00	3	.10	1	0.0	0	0.0	0	27.10	5
	6C	55.0	20.00	1	8.50	3	.01	1	.01	1	0.0	0	28.52	8
	6E	55.0	20.00	1	11.10	3	.52	3	.01	1	0.0	0	31.63	8
	6G	55.0	2.00	1	16.01	4	.82	8	.11	2	0.0	0	18.94	13
	6I	55.0	30.00	1	4.00	3	.11	2	0.0	0	0.0	0	34.11	5
	8A	55.0	8.00	1	30.00	3	.01	1	0.0	0	0.0	0	38.01	5
	8C	55.0	10.00	1	10.00	3	.10	1	.01	1	0.0	0	20.11	5
	8E	55.0	5.00	1	5.50	3	.10	1	.01	1	0.0	0	10.61	5
	8G	55.0	5.00	1	8.00	3	.22	4	.01	1	0.0	0	13.23	8
	8I	55.0	80	1	1.23	2	1.23	5	.10	1	0.0	0	33.62	8
Mean		55.1	9.9240	1.04	15.2504	3.12	.8204	2.36	.0130	.04	0.0	0.0	25.9844	7.16
S11B														
	0A	0.0	.01	1	.13	3	.13	4	.10	1	0.0	0	.36	8
	0C	0.0	.01	1	5.02	4	.62	6	.10	1	0.0	0	5.85	12
	0E	0.0	.01	1	2.52	5	1.03	5	.10	1	0.0	0	3.76	13
	0G	0.0	.10	1	.31	3	.01	6	.51	2	.10	1	1.03	13
	0I	0.0	.10	1	1.10	3	.41	5	.10	1	.10	1	1.81	11
	2A	0.0	.10	1	4.02	4	1.02	4	.80	1	0.0	0	6.14	10
	2C	0.0	.01	1	3.10	3	.72	5	.50	1	.10	1	4.44	12
	2E	0.0	.01	1	5.11	4	.82	4	.11	2	0.0	0	6.65	11
	2G	0.0	.10	1	1.02	4	.83	5	.51	2	.01	1	2.27	13
	2I	0.0	.01	1	.82	4	.72	5	.51	2	.01	1	1.87	13
	4A	0.0	.50	1	3.50	3	4.74	5	.51	2	0.0	0	8.25	15
	4C	0.0	.01	1	4.32	7	.54	5	.50	1	0.0	0	5.37	15
	4E	0.0	.01	1	4.10	3	.52	3	.01	1	.01	1	4.65	8
	4G	0.0	.01	1	1.03	4	1.31	4	.51	2	.10	1	2.88	13
	4I	0.0	.01	1	1.02	4	.12	3	.11	2	.10	1	1.38	11
	6A	0.0	.10	1	2.50	3	2.13	5	.01	1	0.0	0	4.73	9
	6C	0.0	.01	1	5.03	4	3.10	6	.50	1	0.0	0	8.63	10
	6E	0.0	.01	1	3.11	4	2.01	4	.10	1	0.0	0	7.32	10
	6G	0.0	.01	1	4.50	3	.70	3	0.0	0	.01	1	5.32	7
	6I	0.0	.10	1	.72	5	.73	5	.12	3	0.0	0	1.67	15
	8A	0.0	.50	1	5.20	4	2.00	7	.10	1	0.0	0	7.80	13
	8C	0.0	.10	1	5.10	4	.80	5	.10	1	.10	1	7.30	12
	8E	0.0	.10	1	4.01	5	1.22	5	.02	2	.10	1	5.45	14
	8G	0.0	.10	1	2.21	4	.72	5	.12	3	.10	1	3.25	14
	8I	0.0	.10	1	1.12	5	.32	5	.01	1	.01	1	1.56	13
Mean		M	.0852	1.00	2.9330	3.92	1.1436	4.88	.2304	1.44	.0340	.92	4.4264	11.84
S12														
	0A	57.0	10.00	1	14.00	2	1.01	2	.01	1	0.0	0	25.02	5
	0C	55.0	5.00	1	10.00	3	1.10	2	.01	1	0.0	0	18.11	7
	0E	55.0	10.00	1	21.01	4	1.12	4	.01	1	0.0	0	40.14	10
	0G	55.0	7.00	1	13.00	3	.70	3	.01	1	0.0	0	30.71	8
	0I	57.0	10.00	1	7.00	2	1.02	3	.01	1	0.0	0	18.81	7
	2A	55.0	15.00	1	7.00	3	1.02	4	.10	1	0.0	0	23.62	9
	2C	55.0	25.00	1	1.50	3	1.01	2	.51	2	0.0	0	28.02	7
	2E	57.0	12.00	1	15.00	3	.61	3	.10	1	0.0	0	28.71	7
	2G	57.0	5.00	1	8.00	3	.51	3	.01	1	0.0	0	17.52	6
	2I	57.0	20.00	1	8.00	3	2.01	3	.01	1	0.0	0	28.02	7
	4A	57.0	13.00	1	15.00	3	.51	3	.01	1	0.0	0	31.52	7
	4C	57.0	20.00	1	3.10	3	1.02	3	.01	1	0.0	0	24.13	8
	4E	55.0	15.00	1	55.10	3	3.00	1	0.0	0	0.0	0	73.10	5
	4G	55.0	15.00	1	31.00	3	2.10	2	.10	1	0.0	0	48.20	7
	4I	55.0	20.00	1	35.50	3	1.10	3	.01	1	0.0	0	55.61	6
	6A	55.0	25.00	1	5.50	2	.21	3	0.0	0	0.0	0	30.71	5
	6C	55.0	10.00	1	25.00	2	.70	3	.10	1	0.0	0	35.80	7
	6E	55.0	20.00	1	23.50	3	1.61	4	.10	1	0.0	0	45.31	8
	6G	55.0	20.00	1	30.00	3	.30	3	.11	2	0.0	0	50.41	8
	6I	55.0	10.00	1	23.00	3	.80	3	.10	1	0.0	0	33.70	8
	8A	55.0	20.00	1	10	1	11	2	0.0	0	0.0	0	30.21	4
	8C	55.0	7.00	1	5.50	3	2.70	4	.10	1	0.0	0	15.30	8
	8E	55.0	20.00	1	27.00	3	.80	3	.10	1	0.0	0	47.70	7
	8G	55.0	4.00	1	35.00	3	.61	3	.01	1	0.0	0	39.62	8
	8I	57.0	15.00	1	30.00	3	1.00	3	.10	1	0.0	0	46.10	8
Mean		55.3	14.5000	1.00	15.9034	2.88	1.0704	3.08	.0852	.08	0.0	0.0	33.7880	7.30
S14														
	0A	60.0	5.00	1	36.10	8	4.81	8	1.10	3	.01	1	46.72	18

Athabasca Oil Sands Ecological Monitoring Program
August 1992 Survey of Vascular Plant Communities
in Pinus Banksiana Reference Stands
Soil Temperature & Synthetic Variables by Site & Plots

Stand	Plot	TEMP	TREE	TREEREP	SHRUB	SHRUBREP	FERN	FERNREP	GRAM	GRAMREP	PTEM	PTEMREP	TOT	TOTREP
	0C	01.0	0.00	1	20.50	4	2.00	4	13	3	0.0	0	35.33	13
	0E	01.0	0.00	1	35.10	5	5.01	7	.50	1	0.0	0	47.31	14
	0E	07.0	4.00	1	35.00	5	6.10	4	1.00	2	0.0	0	48.10	11
	01	07.0	0.00	1	33.00	5	7.00	6	.50	2	0.0	0	48.30	14
	3A	08.0	4.00	1	37.00	6	2.01	7	.50	2	.50	1	36.01	15
	3C	01.0	11.00	1	29.50	4	3.71	7	.50	2	0.0	0	44.01	15
	3E	01.0	0.00	1	31.00	5	6.01	6	.50	2	0.0	0	44.01	15
	3E	01.0	4.00	1	31.00	4	5.00	5	1.00	3	0.0	0	44.01	12
	3I	01.0	15.00	1	34.50	5	1.01	5	.50	2	0.0	0	42.00	12
	4A	01.0	11.00	1	13.50	5	1.01	5	.50	2	0.0	0	41.31	12
	4C	01.0	12.00	1	15.01	5	2.01	5	.50	2	0.0	0	39.71	12
	4E	00.0	.01	1	34.70	5	5.11	5	1.00	3	0.0	0	44.22	14
	4E	00.0	1.00	1	37.00	4	4.00	7	.50	1	0.0	0	42.00	13
	4I	00.0	3.00	1	30.10	5	3.01	6	.01	1	0.0	0	38.02	14
	5A	00.0	15.00	1	30.50	4	3.32	6	.50	2	0.0	0	38.32	15
	5C	00.0	12.00	1	34.50	6	3.30	6	.50	2	0.0	0	40.00	15
	5E	00.0	10.00	1	30.00	5	5.30	5	.50	2	0.0	0	43.00	15
	5E	00.0	13.00	1	37.10	5	3.00	7	.50	2	0.0	0	50.10	15
	5I	00.0	0.00	1	32.00	6	1.00	5	.50	2	0.0	0	36.42	13
	6A	00.0	20.00	1	30.00	6	6.31	7	.50	2	0.0	0	44.32	14
	6C	00.0	15.00	1	33.00	6	2.31	7	.50	2	0.0	0	41.11	13
	6E	07.0	1.00	1	35.00	6	4.02	7	.50	2	0.0	0	31.42	13
	6E	00.0	15.00	1	33.10	6	3.12	6	.50	2	0.0	0	40.42	13
	6I	00.0	.00	1	33.10	5	4.71	6	.50	2	0.0	0	38.25	13
Mean		00.2	6.0004	1.00	30.3004	4.80	4.3404	5.40	.3004	2.00	.0204	00	42.1304	14.38
810														
	0A	07.0	20.00	2	24.01	6	12.32	6	.00	2	.11	2	07.44	22
	0C	00.0	20.00	2	20.00	6	6.00	14	2.02	2	.11	2	07.00	20
	0E	00.0	23.00	2	23.00	6	6.01	12	1.10	2	.11	2	03.75	20
	0E	00.0	21.00	2	20.00	6	3.71	8	.00	2	.00	1	04.21	18
	0I	07.0	0.00	2	20.00	6	4.70	6	0.0	0	.10	1	04.30	12
	3A	07.0	21.00	2	27.00	7	3.10	4	.01	1	.02	1	01.12	14
	3C	00.0	21.00	2	19.00	7	5.22	8	.01	1	.11	2	05.22	17
	3E	00.0	10.00	2	22.00	7	5.72	6	.00	1	.00	2	07.22	18
	3E	07.0	0.00	2	22.10	7	4.10	4	.10	1	0.0	0	03.20	15
	3I	07.0	12.00	2	26.00	7	2.01	4	.00	1	.01	1	03.72	15
	4A	00.0	12.00	2	22.00	7	3.01	4	.00	1	.02	2	05.02	15
	4C	07.0	10.00	2	24.00	7	3.00	4	.01	1	.02	2	03.72	15
	4E	0.0	10.00	1	01.00	8	5.30	4	.00	1	.00	2	02.00	15
	4E	0.0	20.00	2	40.00	8	10.01	4	.00	1	.00	1	04.01	13
	4I	0.0	11.00	2	41.00	8	8.00	3	.00	1	.00	1	00.00	13
	5A	0.0	20.00	2	33.00	8	10.00	3	.00	1	.00	1	04.10	13
	5C	0.0	20.00	2	42.00	8	7.00	3	.00	1	.00	2	03.10	13
	5E	0.0	12.00	2	44.00	8	10.00	3	.00	1	.00	1	07.50	13
	5E	0.0	10.00	2	35.20	7	7.21	3	.11	1	.00	1	05.72	13
	5I	0.0	12.00	2	40.00	8	20.30	3	.21	1	.00	1	05.72	13
	6A	0.0	15.00	1	37.10	8	7.02	3	.10	1	.00	1	03.01	13
	6C	0.0	10.00	2	32.00	8	10.00	3	.00	1	.00	2	00.12	13
	6E	0.0	21.00	2	40.00	8	7.00	3	.00	1	.00	1	03.01	13
	6E	0.0	10.00	2	24.00	8	4.30	3	.00	1	.00	2	03.30	13
	6I	0.0	10.00	1	32.00	8	5.00	3	.01	1	.00	1	04.01	13
Mean		07.2	17.3000	1.98	28.4004	6.80	7.1330	5.20	.0002	1.76	.2002	1.82	00.3976	17.40
910														
	0A	00.0	13.00	1	23.00	6	13.02	10	1.00	3	0.0	0	01.42	22
	0C	07.0	4.10	2	21.00	6	5.70	6	2.00	3	.00	2	01.00	18
	0E	00.0	20.01	2	13.00	6	5.12	4	1.00	1	.00	1	00.12	19
	0E	07.0	0.00	2	20.00	6	12.22	4	2.00	2	0.0	0	00.12	19
	0I	00.0	17.00	2	10.00	6	5.01	4	2.00	2	0.0	0	00.01	18
	3A	00.0	10.01	2	7.00	7	11.72	4	2.00	2	0.0	0	00.01	18
	3C	00.0	10.00	2	20.00	7	5.10	4	2.00	2	0.0	0	00.74	14
	3E	01.0	21.00	3	10.00	7	10.02	11	4.00	2	.00	0	00.10	24
	3E	00.0	0.10	3	31.00	8	10.22	13	2.00	2	0.0	0	00.02	25
	3I	07.0	20.10	3	10.00	8	5.01	13	4.00	2	0.0	0	07.11	25
	4A	07.0	0.00	3	13.00	8	5.22	13	3.00	2	0.0	0	03.22	25
	4C	01.0	11.00	3	20.00	8	5.01	6	4.00	2	0.0	0	01.01	25
	4E	0.0	10.00	3	20.70	8	14.00	11	4.00	2	0.0	0	01.01	25
	4E	0.0	22.00	3	13.00	8	5.00	8	4.00	2	0.0	0	00.00	25
	4I	0.0	21.00	3	17.10	8	12.00	8	4.00	2	0.0	0	00.00	25
	5A	0.0	20.00	3	17.70	8	13.00	11	7.00	2	0.0	0	00.00	25
	5C	0.0	10.00	3	21.20	7	13.30	7	3.10	2	0.0	0	00.00	25
	5E	0.0	2.00	3	20.00	7	22.11	13	7.00	2	0.0	0	00.00	25
	5E	0.0	10.01	3	8.50	8	5.40	13	4.00	2	0.0	0	00.00	25
	5I	0.0	10.20	3	10.20	8	5.20	8	4.00	2	0.0	0	00.00	25
	6A	0.0	10.30	3	11.20	7	10.01	7	4.00	2	.00	2	03.00	25
	6C	0.0	13.00	3	10.00	8	21.01	10	7.00	2	.00	2	03.01	25
	6E	0.0	12.10	3	20.00	8	7.40	7	3.00	2	.00	2	03.00	25
	6E	0.0	10.00	3	11.00	8	8.00	7	3.01	2	.00	2	03.00	25
	6I	0.0	30.10	3	8.70	8	6.32	8	.00	2	.00	2	03.00	25
Mean		00.3	15.0572	2.44	19.0000	6.70	11.3140	8.32	4.0304	1.60	.0210	00	01.3002	19.76

Athabasca Oil Sands Geological Monitoring Program
August 1982 Survey of Vascular Plant Communities
in Pinus Banksiana Reference Stands
Species Cover % Values per 5x5 m Plot by Stand

Stand	PIBA	PICL	PINA	POTR	POBA	BEPA	LALA	VAMY	VAVI	ARUV	ROAC	PRPE	AMAL	RUST	LEDJ	VIED	HUTD	SABE
S01N Mean	5.824	.0	.0	.0	.0	.0	.0	1.875	1.382	5.080	.0040	.3844	.0080	.0480	0	.0	.0	0
S02N Mean	13.82	.0	.0	.0	0	.0	.0	.0384	.0280	.4760	0	.0	.0	0	0	0	0	.0040
S03N Mean	11 84	.0	.0	.0040	.0	0	.0	1000	.0	2.884	.0	.0040	0	0048	0	0	0048	0
S04N Mean	10 12	.0040	.0	0	.0	.0	.0	1.072	.0	1.880	0080	.0080	.0040	0	0	0	0084	0200
S01S Mean	0112	0	.0	.0	0	.0	.0	.4040	.0200	5020	.0084	.0	0200	0	0	0	0088	0
S02 Mean	28.80	0	.0	.0	0	0	0	.0	0	1.872	.0	0	0	0	0	0	0	0
S03 Mean	8 300	0400	0	1440	0	.0004	0	4.040	7.000	20 44	5240	1480	4720	0	1480	0	0	0
S04 Mean	10.84	0	0	0	0	0	0	5 880	7.380	2.824	0020	0	1172	0	0	0	0	0280
S05 Mean	15 24	0	0	0	0	0	0	4 420	10 84	3 184	1000	.0884	1172	0	0	0	0	4804
S07 Mean	15 72	.0004	0	0	.0	.0	.0	4 004	3 020	4.804	.0480	1488	0788	0044	0	0200	0	0
S08 Mean	7 040	0	0	0040	0	.0	0	1 082	7280	2 080	.0040	0720	0	0	0	0	0	0
S09 Mean	12 72	0200	0400	0180	0	0	.0	1 048	7 000	5 444	2 000	0	0	0	0040	0	0	0200
S10 Mean	9 020	0	0	0	.0040	0	0	4 292	7 140	3 780	0	0184	0	0	0	0	0	0
S11S Mean	0052	0	0	0	0	0	0	2040	0	0176	1 224	2252	0032	0	0	0	0	0
S12 Mean	14 56	0	0	0	0	0	0	5 480	11 88	0	0	0	0084	0	0	0	0	0
S14 Mean	8 000	0	0	0	0	0	0	4 420	4 720	17 76	0080	0	2884	0	0	0	0	0
S15 Mean	14 80	2400	2 160	0040	0	0	0	2 880	1 880	1.328	3 780	0	0200	0	0	0	0	1 124
S16 Mean	14 32	1800	1 328	1412	0040	0	0040	3 140	4 280	3840	1 880	0	0	0	0	1800	0	0200

Athabasca Oil Sands Geological Monitoring Program
August 1992 Survey of Vascular Plant Communities
in Pinus Dominated Reference Stands
Species Cover % Values per Sub m Plot By Stand

Stand	ALCR	LEGR	SAPS	SYAL	BEPU	SASC	SHCA	SABP	VACA	SAMY	MACA	ABLA	AMMU	SABB	HELI	LIBO	CARE	SOSE
S01R Mean	2.000	.0	0	.0	0	.0	.0	.0	0	.0	1484	1338	.0266	.0086	0	.2240	.0048	3204
S02R Mean	.0	0	0	.0	.0	0	.0	.0	.0	0	.2284	0244	0004	.0088	0	0520	0008	.0092
S03R Mean	.0	0	.0	0	0	.0	.0	0000	.0	0	.3216	0338	0040	0	0	0040	0072	.1848
S04R Mean	.0	0	.0	.0	.0	.0	.0	0	.0	0	.4484	0484	0088	0	0328	0	0052	1140
S01S Mean	0	0	.0	0	.0	0	0	0	0	.0	.1788	3288	0092	.2212	0	0852	1332	1138
S02 Mean	0	0	0	.0	0	0	0	0	0	0	0048	0	0	0	0	0008	.0004	0012
S03 Mean	1 548	0	.0	0	0	.0	.0200	0	0	.0	1 884	0040	0888	1128	0880	0440	0216	0720
S04 Mean	0	.2240	0	0	0	0	0	0	0	0	0488	0200	0	0	1412	1 472	0048	.0
S05 Mean	0	0	0040	0	0	0	0	0040	0	0	3784	1584	0048	0	0444	0800	0080	.0208
S07 Mean	0	0	0	0	0	0	0	0	0	0	1 432	2384	0036	0224	0804	1 216	0488	1288
S08 Mean	0	0	0	0	0	0	0	0	0	0	0784	3584	0092	0	0444	0	0100	1484
S09 Mean	5 288	1000	0	0200	0	0	0	0	0	0	7848	1688	1088	1492	0408	1 888	0208	0280
S10 Mean	0	0	0	0	0	0	0	0	0	0	0824	0004	0	0	2892	0	0024	0048
S11R Mean	1 088	0	0	0	0	0	0	0	0	0	0484	0	0088	0280	0044	0480	0008	0
S12 Mean	0	0	0	0	0	0	0	0	0	0	1848	0	0088	0004	0884	7480	0008	0
S14 Mean	0	0400	0	0	0	0	0	0	0	0	1 012	0	0	0	2084	2 180	0184	0
S15 Mean	0	10 88	0	0	0	0	1 020	0	0	1480	0248	0	0	0	1048	4 080	0	0052
S16 Mean	0	1 020	0040	0	0	0	1 304	0	3200	0	0	0	0	0	2644	4 820	0	0088

Athabasca Oil Sands Ecological Monitoring Program
August 1992 Survey of Vascular Plant Communities
in Pinus banksiana Reference Stands
Species Cover % Values per 5x5 m Plot by Stand

Stand	VIAD	APAN	COPA	PRVI	POTRI	SELI	PYVI	HICA	PYSE	EPAN	ARCA	ARNU	CDCA	LIPH	AMPA	TRSS	VIRE	SORE
S01N Mean	.0006	0032	.0	.1004	.1516	.0	0006	.0	.0	.0448	.0048	.0	.0	0	.0282	0	.0	.0
S02N Mean	0	.0004	.0	0	0	.0	0212	0	.0	0	.0	0	.0	0	.0188	.0	0	.0
S03N Mean	.0044	0282	.0	0334	.0004	.0	.0128	.0	.0	.0	.0388	0	.0	0	.0082	0	0	0
S04N Mean	0080	.2838	0	.0468	.0088	.0	0278	0288	0	.0	0044	0	0	0	0040	0	0	.0
S01S Mean	.0024	1838	.0	.3138	.0040	.0	0	.0	.0	.0284	0288	.0	0	.0	0084	0	0	0
S02 Mean	.0	0004	.0	.0	.0	.0	0040	0	.0	0	0	0	0	0	0	0	0	.0
S03 Mean	.0030	.0	.8520	.0380	.1488	1800	.0380	0888	0044	0520	0	3320	0400	0032	0128	0	0	.0
S04 Mean	0	.0	.3088	.0	.0128	1400	.0788	0082	0	0244	.0	0	2.872	0	0	0	0	0
S05 Mean	.0	1384	.0	.0	.0040	.0	0128	0012	.0	.0	0	.0	0	0	0	0	0	.0
S07 Mean	.0880	.0880	.0	.0320	.0320	0448	0172	.0008	.0	0	0	0	0	0	0200	0	0	.0040
S08 Mean	0	.3788	.0	.0	0216	.0	0	0088	.0	0	0	0	0	0	0	0	0	.0
S09 Mean	0416	0	0	.3134	1088	2084	0240	0872	0300	.0404	0	0	0880	0088	0	0	0340	0332
S10 Mean	.0	0368	.0	.0	.0040	.3848	0328	0308	0	0	0	0	0	0	0	0	0	0
S11S Mean	0	0	0	0	0884	0004	0	0	0	0308	0	2872	0008	0	0140	0	0	0
S12 Mean	0	0	0	0	0	1000	0820	0	0	0	0	0	0	0	0	0	0	.0
S14 Mean	0008	0	3840	0	0888	7000	0804	0008	0	0040	0	0	1 288	0	0	0	0	0
S15 Mean	0	0	0	1048	1844	0	0180	0048	0200	0	0	0	6 280	0044	0	0	6008	0280
S16 Mean	0	0	0	2844	1020	0	0280	0780	0840	3180	0	0	6 720	0008	0	2720	0044	0184

Athabasca Oil Sands Geological Monitoring Program
August 1983 Survey of Tabular Plant Communities
in Pinus Banksiana Reference Stands
Species Cover % Values per 5x5 m Plot by Stand

Stand	LEDG	VIAM	PEPA	ASCI	ACMI	ARRA	BRSP	SESP	SESE	SECY	STLO	RACE	MINT	GEST	ARLY	CHEN	PELA	AGPL
S01R Mean	.0	.0	0	.0	0252	.0334	.0	.0	.0408	.0	0	0	.0	0	0	0	.0	0
S02R Mean	0	0	0	0	0	0	.0	0	.0130	.0	0	0	0	.0	0	0	.0	0
S03R Mean	0	.0	0	.0	.0008	.0	.0	.0	.0	.0004	0	0	0	.0	0	0	0	0
S04R Mean	0	0	0	0	.0008	0	0	0	.0	0004	0004	0	0	0	0013	.0	.0	.0
S01E Mean	0	0	0	0004	0415	0	.0	.0	0008	0	0008	0004	0400	1530	0008	1048	0040	0040
S02 Mean	0	0	0	0	0	0	.0	0	0	0	0	0	0	0	0	0	0	0
S03 Mean	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
S04 Mean	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
S05 Mean	0	0	0	0	0	0	.0	0	.0	0	0	0	0	0	0	0	0	0
S07 Mean	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
S08 Mean	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
S09 Mean	0	0	0	0	0	0040	0	0040	0	0	0	0	0	0	0	0	0	0
S10 Mean	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
S11B Mean	0	0	0	0	0	0	0	0	0	0	0	0	0008	0052	0	0	0020	0
S12 Mean	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
S14 Mean	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
S15 Mean	0044	0244	0200	0032	0008	0040	0	0	0	0	0	0	0	0	0	0	0	0
S16 Mean	7036	0180	1044	1048	0352	0480	0	0	0	0	0	0	0	2	0	0	0	0

Athabasca Oil Sands Geological Monitoring Program
August 1982 Survey of Vascular Plant Communities
in Pinus banksiana Reference Stands
Species Cover % Values per Sub a Plot by Stand

Stand	CEAM	RUAC	PYAS	MINU	ORPU	ELIN	CERI	CYPS	DRAS	ASSC	BRCI	SCPU	JUBA	ELGL	CACA	CAIN	PESA	ORPU
S01N Mean	.0	.0	0	.0	.2133	.0	.2404	.0888	.0004	.0040	.0	.0	.0	.0	.0	0244	.0044	.0
S02N Mean	.0	.0	.0	0	.0280	.0	.0252	.0	.0	.0	.0	.0	.0	.0	0	.0	.0	0
S03N Mean	.0	.0	.0	.0	.0512	.0	.0004	.0480	0	0048	.0	.0	.0	.0	.0	.0040	0044	.0
S04N Mean	.0	.0	.0	.0	12	.0	.0004	.0212	.0	.0	.0	.0	.0	.0	0	0	0004	0
S01S Mean	.0	.0	.0	0	.4404	0004	.0524	.2988	.0	.0	.0	.0	.0	.0	0	0	0	0
S02 Mean	0	0	.0	.0	0012	.0	.0	.0088	.0	0	.0	.0	.0	0	0	0	0	0
S03 Mean	0	0	0	.0	.2488	1492	.0	.0084	.0128	.0	0	0440	0	0	0040	0	0	0
S04 Mean	.0	0	0	0	1328	0332	.0	0072	.0382	0	0	.0	0	0	0	0	0	0
S05 Mean	0	.0	0	.0	0304	0	.0004	.0180	.0	0	0	0	0	0	0	0	0	0
S07 Mean	0	0	.0	0	0388	1280	0732	0028	.0	0	0	0	0	0	0	0	0	0
S06 Mean	0	0	0	0	.0192	0	0048	0040	.0	0008	0	.0	0	0	0	0	0	.0
S08 Mean	0	.0	0	0	1548	0784	.2280	.0104	0	0	.0	0	0048	0	0	0	0044	0204
S10 Mean	0	0	0	0	0120	0	.0	0012	.0	.0004	0	0	0	0	0	0	0	0
S11S Mean	0	0	0	0	0044	.2248	0	0012	.0	0	0	0	0	0	0	0	0	0
S12 Mean	0	0	.0	0	0044	0	0	0	0004	0	0	0	0	0	0004	0	0	0
S14 Mean	0	0	0	0	2288	1312	0	0088	0212	0	0	0	0	0	0	0	0	0
S15 Mean	0012	0200	0	0400	0140	.3724	0244	0	0040	0	0	0	0	0	0	0284	0	0	0
S16 Mean	0004	0	0004	0	0240	4 480	0004	0	0	0	0	0	0	0	1120	0	0	0

Athabasca Oil Sands Geological Monitoring Program
August 1983 Survey of Vascular Plant Communities
in Pinus Banksiana Reference Stands
Species Cover % Values per 5x5 m Plot By Stand

Stand	CXSP	EQVA	LYYR	LYAN	EQSY	EQSC	SEDI	EQPR	LYCL	EQAR	PRVI	LOVI	PESR	EMNI
S01R Mean	0	0	.0	.0	0	.0	.0004	.0	0	.0	.0	0	0	0
S03R Mean	0	0	.0	0	.0	0	.0	0	.0	.0	0	0	0	0
S05R Mean	0	0	0	.0	0	0	0	.0	0	0	.0	0	0	.0
S04R Mean	0	0	.0	.0	0	0	0	.0	.0	.0	0	.0	0	0
S01E Mean	0	.0	.0	.0	.0	0	0	0	0	.0	0	0	0	0
S02 Mean	.0	0	.0	0	0	0	0	0	0	0	0	0	0	0
S03 Mean	0	0	1000	0	0	0	0	.0	.0	0	.0	0	0	0
S04 Mean	.0	0	0	.0	0	0	0	0	0	0	0	0	0	0
S05 Mean	0	0040	.0	0	0	0	0	0	0	0	.0	0	0	0
S07 Mean	0	0004	0080	.0	0	0	0	0	0	0	0	0	.0	0
S06 Mean	0	0	0	0	0	0	0	0	0	0	0004	0	0	0
S09 Mean	0	0156	0	0	0004	0004	0	0	0	0	0	0	0	0
S10 Mean	0	0	0	0	0	0	0	0	0	0	0	0	0	0
S11B Mean	0	0	0240	0	0	0	0	0	0	0	0	0	0	0
S12 Mean	0	0	0	0	0	0	0	0	0	0	.0	0	0	0
S14 Mean	0	0	0	0	0304	0	0	0	0	0	0	0	0	0
S15 Mean	0040	0	0	0	0238	0080	0	0	0	1736	0	0004	0	0
S16 Mean	0	.0	3040	5420	0	0004	0	0044	0200	0044	0	0	0040	0040

Athabasca Oil Sands Ecological Monitoring Program
August 1982 Survey of Vascular Plant Communities
in Pinus Banksiana Reference Stands
Soil Temperature & Synthetic Variables per 5x5 m Plot by Stand

Stand	TEMP	TREE	TREERP	SHRUB	SHRUBRP	FORB	FORBRP	GRAM	GRAMRP	PTER	PTERRP	TOT	TOTRP
S01N Mean	57.8	5.8240	1.00	10.8888	3.72	1.2384	6.72	.6888	2.88	.0004	.04	18.8072	15.44
S02N Mean	56.8	13.8200	1.00	1.9884	2.40	.3182	2.00	.0832	1.00	0.0	0.0	16.2808	5.40
S03N Mean	58.7	11.8440	1.04	3.8818	1.44	.5788	4.80	.1108	2.08	0.0	0.0	16.9180	9 16
S04N Mean	61.2	10.1280	1.04	3.0732	1.92	1.0820	5.00	.1712	1.16	0.0	0.0	14.4844	10 12
S01S Mean	63.7	.0112	.76	1.2032	2.88	1.8782	5.20	.7800	2.32	0.0	0.0	3.8786	15 16
S02 Mean	57.7	28.8000	1.00	1.8728	1.00	.0108	.36	.0080	.44	0.0	0.0	30.4916	2 80
S03 Mean	53.9	9.4884	1.44	35.7680	8 16	4.8844	8.28	.4840	2.24	.1600	.08	80.7448	16 20
S04 Mean	58.2	10.8400	1.00	18.1172	4.60	4.2540	8.24	.2892	2 72	0.0	0.0	33.8804	13 76
S05 Mean	57.8	15.2400	1.00	19 1180	4.88	.7772	3.92	.0488	1.84	.0040	.04	35 1880	11 28
S07 Mean	59.0	15.7200	1 04	14.9420	5.82	2.3884	7.88	.2388	2 40	0884	.24	33.3480	17 16
S06 Mean	58.8	7.8440	1 04	4.8244	3.48	1.8480	5.16	.0248	1 40	0.0	0.0	13.7392	11 08
S09 Mean	55.8	12.8880	1.24	26.0840	8.04	2.2800	8.28	1.1812	4.84	.0200	.92	42.3812	20 12
S10 Mean	56 1	8 8240	1.04	15.2284	3.12	.8284	3.36	.0136	.84	0 0	0.0	25 8844	7 16
S11S Mean	M	0852	1.00	2.8320	3.92	1.1428	4.88	.2304	1 44	.0340	.52	4 4244	11 84
S12 Mean	58.3	14 5800	1.00	16 0824	2.56	1.0704	3.88	.0852	.96	0.0	0 0	33 7880	7.20
S14 Mean	59.2	8 0004	1.00	29.3844	4.80	4.3444	8.40	.3808	2 00	.0204	.08	41 1304	14 28
S15 Mean	57.3	17 2040	1.88	35.4004	8.88	7.1328	8.20	4582	1 76	.2082	1 52	80 3976	17 40
S16 Mean	58.8	15 8872	2 44	18.8880	8 76	11.2140	8.28	4.5384	1 40	.8218	.88	51.2882	19 76

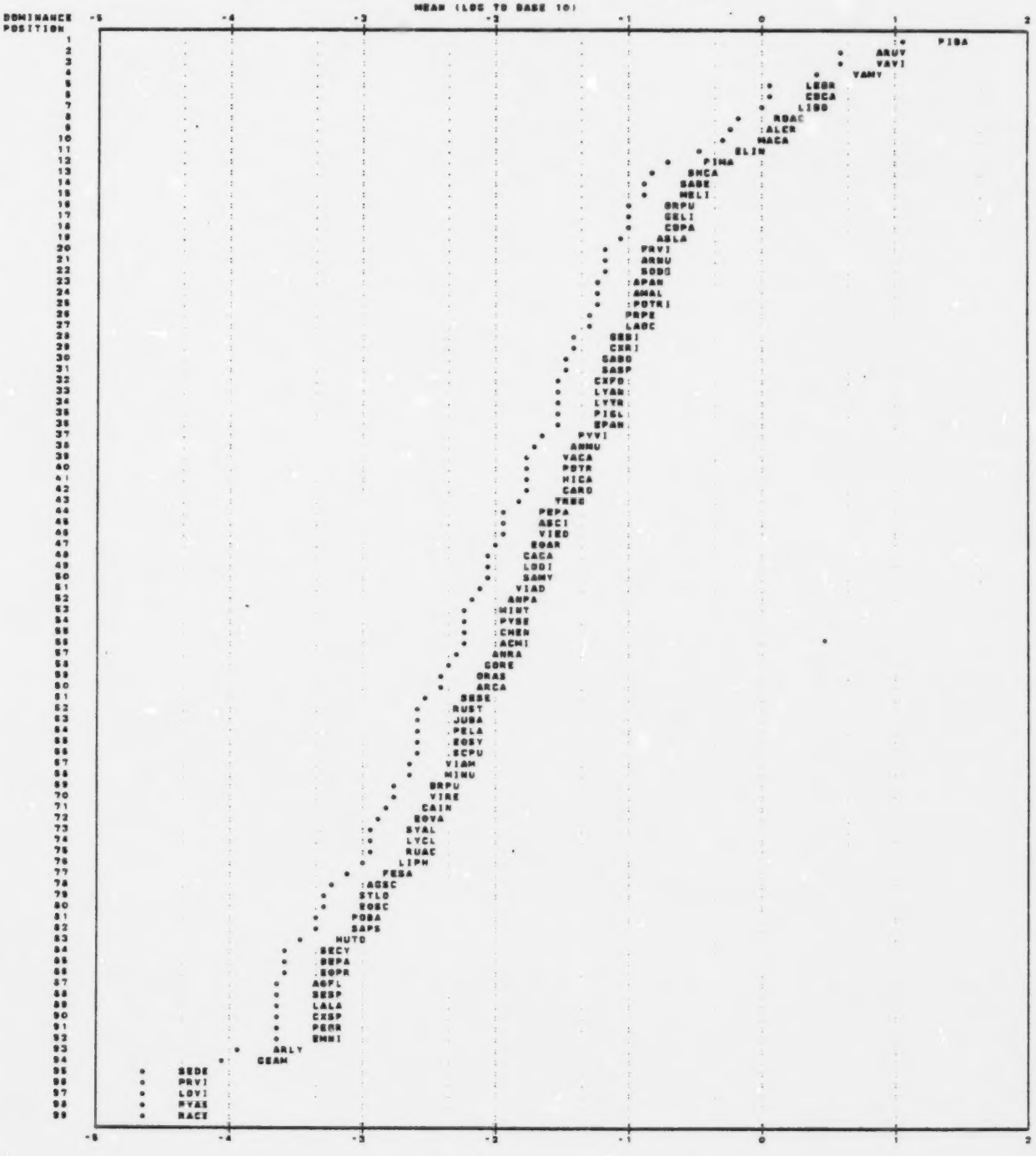
Athabasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/07/83 PAGE 19
Descriptive Statistics for Each Species Variable Over All Stands
FILE A0582V2S (CREATION DATE = 04/07/83) Eighteen Stand Tables of 1982 Vascular Cover % Data (5m x 5m)
SUBFILE S01N S02N S03N S04N S01S S02 S03 S04 S05 S07
S06 S09 S10 S11S S12 S14 S15 S16

LABEL	VARIABLE	N	PRES %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Pinus banksiana	PIBA	450	56.67	11.3033	5.808	0.406	0.036	+0.0	40.00
Picea glauca	PIGL	450	3.11	0.0281	0.198	0.009	0.321	+0.0	2.00
Picea mariana	PIMA	450	7.78	0.1960	0.876	0.041	0.211	+0.0	8.00
Populus tremuloides	POTR	450	6.22	0.0176	0.081	0.004	0.247	+0.0	1.00
Populus balsamifera	POBA	450	0.44	0.0004	0.007	0.000	0.700	+0.0	0.10
Betula papyrifera	BEPA	450	0.44	0.0002	0.005	0.000	0.913	+0.0	0.10
Larix laricina	LALA	450	0.22	0.0002	0.005	0.000	1.000	+0.0	0.10
Vaccinium myrtilloides	VAMY	450	50.22	2.8061	3.198	0.148	0.057	+0.0	20.00
Vaccinium vitis-idaea	VAVI	450	58.89	3.0456	5.613	0.265	0.088	+0.0	35.00
Arctostaphylos uva-ursi	ARUV	450	52.22	4.1416	8.516	0.397	0.074	+0.0	40.00
Rosa acicularis	ROAC	450	34.00	0.7122	1.416	0.067	0.094	+0.0	10.00
Prunus pensylvanica	PRPE	450	15.33	0.0504	0.278	0.013	0.256	+0.0	5.00
Amelanchier alnifolia	AMAL	450	20.22	0.0813	0.211	0.010	0.162	+0.0	2.00
Rubus strigosus	RUST	450	1.33	0.0027	0.046	0.002	0.821	+0.0	1.00
Lonicera dioica	LODI	450	1.56	0.0064	0.064	0.004	0.678	+0.0	1.00
Viburnum edule	VIED	450	0.66	0.0111	0.137	0.006	0.562	+0.0	2.00
Hudsonia tomentosa	HUTO	450	1.33	0.0003	0.005	0.000	0.882	+0.0	0.10
Salix bebbiana	SABE	450	12.67	0.1347	0.470	0.022	0.160	+0.0	3.00
Alnus crispa	ALCR	450	8.22	0.1533	2.783	0.177	0.321	+0.0	50.00
Ledum groenlandicum	LEGR	450	10.88	1.1747	4.822	0.232	0.136	+0.0	40.00
Salix pseudomonticola	SAPS	450	0.44	0.0004	0.007	0.000	0.706	+0.0	0.10
Symphoricarpos albus	SYAL	450	0.22	0.0011	0.024	0.001	1.000	+0.0	0.50
Betula pumila	BEPU	450	0.0	0.0	0.0	0.0	0.0	+0.0	0.0
Salix glauca	SAGL	450	0.0	0.0	0.0	0.0	0.0	+0.0	0.0
Shepherdia canadensis	SHCA	450	5.78	0.1580	0.835	0.044	0.278	+0.0	10.00
Salix sp.	SASP	450	0.44	0.0238	0.707	0.033	0.993	+0.0	15.00
Vaccinium caespitosum	VACA	450	3.11	0.0178	0.181	0.008	0.427	+0.0	3.00
Salix myrtillifolia	SAMY	450	1.33	0.0082	0.193	0.009	0.589	+0.0	2.00
Maianthemum canadense	MACA	450	70.00	0.4427	0.740	0.035	0.072	+0.0	5.00
Aster laevis	ASLA	450	34.00	0.0852	0.196	0.009	0.109	+0.0	1.00
Anemone multifida	ANMU	450	42.44	0.0185	0.080	0.003	0.184	+0.0	0.50
Galium boreale	GABO	450	22.67	0.0241	0.137	0.006	0.190	+0.0	2.00
Melampyrum lineare	MELI	450	36.89	0.1380	0.519	0.018	0.111	+0.0	3.00
Linnaea borealis	LIBO	450	49.78	0.9837	1.823	0.086	0.088	+0.0	12.00
Campanula rotundifolia	CARO	450	39.56	0.0182	0.048	0.002	0.163	+0.0	0.50
Solidago decumbens	SODE	450	41.33	0.0844	0.140	0.007	0.152	+0.0	1.00
Viola adunca	VIAD	450	13.22	0.0078	0.028	0.001	0.157	+0.0	0.50
Apocynum androsaemifolium	APAN	450	27.11	0.0621	0.187	0.009	0.142	+0.0	2.00
Comandra pallida	COPA	450	13.56	0.0869	0.321	0.015	0.158	+0.0	2.00
Fragaria virginiana	FRVI	450	25.33	0.0688	0.190	0.009	0.130	+0.0	1.00
Potentilla tridentata	POTRI	450	30.89	0.0546	0.154	0.007	0.123	+0.0	1.00
Goodyera livigum	GELI	450	12.00	0.0388	0.388	0.018	0.183	+0.0	3.00
Pyrola virens	PYVI	450	22.00	0.0248	0.070	0.003	0.137	+0.0	0.50
Hieracium canadense	HICA	450	18.67	0.0183	0.068	0.003	0.162	+0.0	0.50
Pyrola secunda	PYSE	450	3.67	0.0080	0.044	0.002	0.275	+0.0	0.50
Epilobium angustifolium	EPAN	450	7.11	0.0260	0.172	0.008	0.278	+0.0	2.00
Artemisia campestris	ARCA	450	5.33	0.0038	0.028	0.001	0.347	+0.0	0.50
Aralia nudicaulis	ARNU	450	8.00	0.0851	0.379	0.018	0.270	+0.0	5.00
Cornus canadensis	COCA	450	23.33	1.0795	2.486	0.183	0.183	+0.0	48.00
Lilium philadelphicum	LIPH	450	3.56	0.0010	0.006	0.000	0.488	+0.0	0.50
Anemone patens	ANPA	450	8.11	0.0064	0.022	0.001	0.234	+0.0	0.10
Trientalis borealis	TRBO	450	2.89	0.0151	0.102	0.005	0.316	+0.0	1.00
Viola renifolia	VIRE	450	1.33	0.0016	0.024	0.001	0.711	+0.0	0.50
Goodyera repens	GORE	450	3.78	0.0046	0.038	0.002	0.375	+0.0	0.50
Lathyrus ochroleucus	LAOC	450	7.11	0.0487	0.271	0.013	0.283	+0.0	4.00
Vicia americana	VIAM	450	1.56	0.0022	0.028	0.001	0.541	+0.0	0.50
Petasites palmatus	PEPA	450	1.78	0.0114	0.115	0.005	0.478	+0.0	2.00
Aster ciliolatus	ASCI	450	4.67	0.0112	0.062	0.004	0.348	+0.0	1.00
Achillea millefolium	ACMI	450	10.89	0.0856	0.330	0.001	0.288	+0.0	0.50
Antennaria racemosa	ANRA	450	2.67	0.0051	0.043	0.002	0.392	+0.0	0.50
Draba sp.	DRSP	450	0.0	0.0	0.0	0.0	0.0	+0.0	0.0
Senecio sp.	SESP	450	0.22	0.0002	0.005	0.000	1.000	+0.0	0.10
Senecio sp.	SESE	450	2.89	0.0030	0.027	0.001	0.427	+0.0	0.50
Senecio cymbalarioides	SECY	450	0.67	0.0003	0.005	0.000	0.641	+0.0	0.10
Stellaria longipes	STLO	450	1.11	0.0005	0.007	0.000	0.616	+0.0	0.10
Ranunculus sp.	RACE	450	0.22	0.0000	0.000	0.000	1.000	+0.0	0.01
Labiatae sp.	MINT	450	3.11	0.0081	0.059	0.003	0.488	+0.0	1.00
Geranium bicknellii	GEBI	450	10.22	0.0402	0.216	0.010	0.254	+0.0	3.00
Arabis lyallii	ARLY	450	1.11	0.0001	0.001	0.000	0.445	+0.0	0.01
Chenopodium sp.	CHEN	450	2.44	0.0058	0.058	0.003	0.475	+0.0	1.00
Pedicularis labradorica	PELA	450	2.67	0.0026	0.028	0.001	0.483	+0.0	0.50
Aquilegia flavescens	AQFL	450	0.22	0.0002	0.005	0.000	1.000	+0.0	0.10
Gentianella amarella	GEAM	450	0.89	0.0001	0.001	0.000	0.496	+0.0	0.01
Rubus acaulis	RUAC	450	0.22	0.0011	0.024	0.001	1.000	+0.0	0.50
Pyrola asarifolia	PYAS	450	0.22	0.0000	0.000	0.000	1.000	+0.0	0.01
Mitella nuda	MINU	450	0.22	0.0022	0.047	0.002	1.000	+0.0	1.00
Bryospsis pungens	BRPU	450	72.67	0.1029	0.186	0.008	0.065	+0.0	1.00
Elymus innovatus	ELIN	450	34.44	0.3391	1.344	0.063	0.187	+0.0	15.00
Carex richardsonii	CXRI	450	16.67	0.0306	0.122	0.006	0.157	+0.0	1.00
Carex foenea	CXFO	450	38.22	0.0310	0.098	0.005	0.150	+0.0	1.00
Bryospsis asperifolia	BRAS	450	8.33	0.0041	0.035	0.002	0.466	+0.0	0.50
Agrostis scabra	AGSC	450	1.56	0.0008	0.007	0.000	0.571	+0.0	0.10
Bromus ciliatus	BRCI	450	0.0	0.0	0.0	0.0	0.0	+0.0	0.0
Schizachne purpurascens	SCPU	450	0.67	0.0024	0.034	0.002	0.548	+0.0	0.50
Juncus balticus	JUBA	450	5.11	0.0027	0.018	0.001	0.270	+0.0	0.10
Elymus glaucus	ELGL	450	0.0	0.0	0.0	0.0	0.0	+0.0	0.0
Calamagrostis canadensis	CACA	450	4.22	0.0048	0.064	0.003	0.356	+0.0	1.00
Calamagrostis inexpansa	CAIN	450	0.89	0.0016	0.024	0.001	0.721	+0.0	0.50
Festuca saximontana	FESA	450	1.56	0.0008	0.008	0.000	0.511	+0.0	0.10
Bromus pumellianus	BRPU	450	2.89	0.0017	0.012	0.001	0.347	+0.0	0.10
Carex sp.	CXSP	450	0.22	0.0002	0.005	0.000	1.000	+0.0	0.10
Equisetum variegatum	EQVA	450	4.89	0.0013	0.010	0.000	0.350	+0.0	0.10
Lycopodium tristachyum	LYTR	450	8.00	0.0282	0.204	0.010	0.329	+0.0	2.00
Lycopodium annotinum	LYAN	450	1.78	0.0304	0.346	0.016	0.538	+0.0	5.00
Equisetum sylvaticum	EQSY	450	4.00	0.0025	0.026	0.001	0.484	+0.0	0.50
Equisetum scirpoides	EQSC	450	1.11	0.0005	0.007	0.000	0.616	+0.0	0.10
Selaginella densa	SEDE	450	0.22	0.0000	0.000	0.000	1.000	+0.0	0.01
Equisetum pratense	EQPR	450	0.44	0.0002	0.005	0.000	0.913	+0.0	0.10
Lycopodium clavatum	LYCL	450	0.22	0.0011	0.024	0.001	1.000	+0.0	0.50
Equisetum arvense	EQAR	450	8.33	0.0085	0.064	0.003	0.328	+0.0	1.00
Prunus virginiana	PRVI	450	0.22	0.0000	0.000	0.000	1.000	+0.0	0.01
Lonicera villosa	LOVI	450	0.22	0.0000	0.000	0.000	1.000	+0.0	0.01
Pedicularis groenlandica	PEGR	450	0.22	0.0002	0.005	0.000	1.000	+0.0	0.10
Empetrum nigrum	EMNI	450	0.22	97.0002	0.005	0.000	1.000	+0.0	0.10

BASED ON 99 POSITIVE MEANS SIMPSON'S INDEX OF DOMINANCE CONCENTRATION C = 0.200
SHANNON-WEAVER INDEX OF DIVERSITY. H' = 2.308 (NATURAL LOGS)

99 OF THE 104 VARIABLES HAVE POSITIVE MEANS, WHICH SUM TO 38.3527

Athabasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/07/83 PAGE 20
Descriptive Statistics for Each Species Variable Over All Stands
FILE A0582Y25 (CREATION DATE = 04/07/83) Eighteen Stand Tables of 1982 Vascular Cover % Data (9m x 9m)
SUBFILE S01N S02N S03N S04N S01S S02 S03 S04 S05 S07
S08 S09 S10 S11S S12 S14 S15 S16



Athabascan 911 Sands Ecological Monitoring: August 1992 Surveys 04/07/93 PAGE 33
Descriptive Statistics for Synthetic Variables Over All Stands
FILE A0592Y2S (CREATION DATE = 04/07/93) Eighteen Stand Tables of 1992 Vascular Cover % Data (Sm = Sm)
SUBFILE S01N S02N S03N S04N S01S S02 S03 S04 S05 S07
S06 S08 S10 S11S S12 S14 S15 S15

LABEL	VARIABLE	N	FREQ %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Soil Temperature 5-10 cm degrees F	TEMP	288	100.00	56.8302	2.824	0.132	0.002	53.00	71.00
Total Tree Cover per Plot	TREE	450	99.67	11.5470	8.750	0.412	0.035	0.0	40.00
Tree Species Richness per Plot	TREERP	450	99.67	1.1588	0.898	0.024	0.020	0.0	4.00
Total Shrub Cover per Plot	SHRUB	450	99.56	14.4787	13.787	0.648	0.045	0.0	61.00
Shrub Species Richness per Plot	SHRUBRP	450	99.56	3.0756	1.573	0.093	0.023	0.0	9.00
Total Forb Cover per Plot	FORB	450	94.00	3.6187	4.617	0.188	0.072	0.0	46.71
Forb Species Richness per Plot	FORBRP	450	94.00	5.5111	3.077	0.145	0.026	0.0	16.00
Total Graminoid Cover per Plot	GRAM	450	99.89	9.5221	1.356	0.064	0.139	0.0	15.00
Graminoid Species Richness per Plot	GRAMRP	450	99.89	1.6444	1.193	0.055	0.030	0.0	7.00
Total Pteridophyte Cover per Plot	PTER	450	15.89	0.0753	0.432	0.021	0.273	0.0	3.00
Pteridophyte Species Richness per Plot	PTERRP	450	15.89	0.2000	0.848	0.023	0.107	0.0	3.00
Total Vascular Cover per Plot	TBT	450	100.00	39.2837	19.158	0.903	0.031	0.25	93.61
Species Richness per Plot	TBTNP	450	100.00	13.7600	5.402	0.255	0.020	1.00	30.00

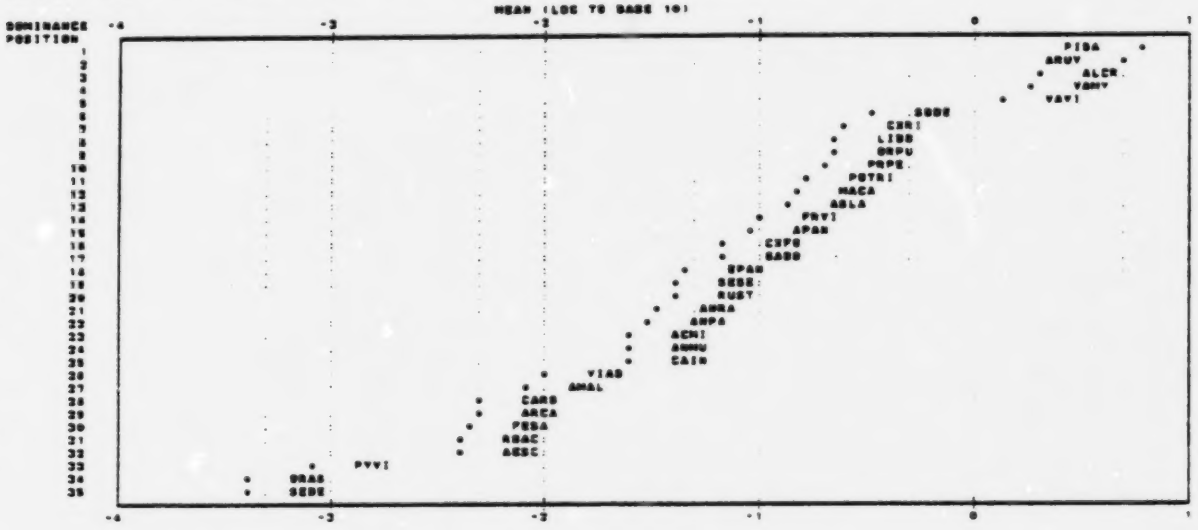
Athabasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/07/83 PAGE 24
Descriptive Statistics for Each Species Variable and Each Stand
FILE A8582V35 (CREATION DATE = 04/07/83) Eighteen Stand Tables of 1982 Vascular Cover % Data (5m x 5m)
SUBFILE 8018

LABEL	VARIABLE	N	FREQ %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Pinus banksiana	PIBA	25	100.00	5.8240	4.601	0.980	0.165	0.10	20.00
Picea glauca	PIGL	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Picea mariana	PIMA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Populus tremuloides	POTR	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Populus balsamifera	POBA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Betula papyrifera	BEPA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Larix laricina	LALA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Vaccinium myrtilloides	VAMY	25	88.00	1.6760	2.139	0.428	0.226	+0.0	10.00
Vaccinium vitis-idaea	VAVI	25	84.00	1.3824	2.262	0.452	0.328	+0.0	10.00
Arctostaphylos uva-ursi	ARUV	25	100.00	5.0000	4.048	0.809	0.195	0.50	17.00
Rosa acicularis	ROAC	25	4.00	0.0040	0.020	0.004	1.000	+0.0	0.10
Prunus pensylvanica	PRPE	25	12.00	0.2044	0.595	0.206	0.578	+0.0	5.00
Amelanchier alnifolia	AMAL	25	8.00	0.0080	0.028	0.006	0.693	+0.0	0.10
Rubus strigosus	RUST	25	4.00	0.0400	0.200	0.040	1.000	+0.0	1.00
Lonicera dioica	LODI	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Viburnum edule	VIED	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Hudsonia tomentosa	HUTO	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Salix bebbiana	SABE	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Alnus crispa	ALCR	25	8.00	2.0800	8.991	1.798	0.861	+0.0	50.00
Ledum groenlandicum	LEGR	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Salix pseudomonticola	SAPS	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Symphoricarpos albus	SYAL	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Betula pumila	BEPU	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Salix serulariana	SASE	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Shepardia canadensis	SHCA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Salix sp.	SASP	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Vaccinium caespitosum	VACA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Salix myrtillifolia	SAMY	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Maianthemum canadense	MACA	25	80.00	0.1484	0.278	0.055	0.377	+0.0	1.00
Aster laevis	ASLA	25	64.00	0.1338	0.189	0.034	0.253	+0.0	0.80
Anemone multifida	ANMU	25	56.00	0.0248	0.038	0.008	0.312	+0.0	0.10
Salix boreals	SABO	25	84.00	0.0656	0.103	0.021	0.313	+0.0	0.50
Melampyrum lineare	MELI	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Linnaea borealis	LIBO	25	96.00	0.2240	0.310	0.062	0.277	+0.0	1.00
Campanula rotundifolia	CARO	25	48.00	0.0068	0.008	0.001	0.212	+0.0	0.01
Solidago decumbens	SODE	25	92.00	0.3204	0.391	0.058	0.182	+0.0	1.00
Viola sauvis	VIAD	25	24.00	0.0088	0.027	0.005	0.572	+0.0	0.10
Apocynum androsaemifolium	APAN	25	88.00	0.0832	0.084	0.018	0.202	+0.0	0.50
Cassandra calyculata	CAPA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Fragaria virginiana	FRVI	25	72.00	0.1004	0.128	0.025	0.257	+0.0	0.50
Potentilla tridentata	POTRI	25	92.00	0.1816	0.332	0.066	0.411	+0.0	1.00
Geocaulon lividum	GELI	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Pyrola virens	PYVI	25	8.00	0.0008	0.003	0.001	0.982	+0.0	0.01
Hieracium canadense	HICA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Pyrola secunda	PYSE	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Epilobium angustifolium	EPAN	25	16.00	0.0448	0.200	0.040	0.893	+0.0	1.00
Artemisia campestris	ARCA	25	12.00	0.0048	0.020	0.004	0.834	+0.0	0.10
Aralia nudicaulis	ARNU	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Cornus canadensis	COCA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Lilium philadelphicum	LIPH	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Anemone patens	ANPA	25	40.00	0.0252	0.048	0.009	0.309	+0.0	0.10
Trientalis borealis	TRBO	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Viola renifolia	VIRE	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Geodyera repens	GORE	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Lathyrus ochroleucus	LAOC	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Viola americana	VIAM	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Potentilla palmatus	PEPA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Aster ciliolatus	ASCI	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Achillea millefolium	ACMI	25	72.00	0.0252	0.038	0.008	0.305	+0.0	0.10
Antennaria racemosa	ANRA	25	20.00	0.0324	0.103	0.021	0.635	+0.0	0.50
Draba sp	DRSP	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Senecio sp	SESP	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Senecio sp	SESE	25	32.00	0.0408	0.184	0.021	0.508	+0.0	0.70
Senecio cymbalarioides	SECY	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Stellaria longipes	STLO	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Ranunculus sp	RACE	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Labiatae sp	MINT	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Geranium bicknellii	GEBI	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Arabis lyallii	ARLY	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Chenopodium sp	CHEN	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Pedicularis labradorica	PELA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Aquilegia flavescens	AQFL	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Gentianella amarella	GEAM	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Rubus acaulis	RUAC	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Pyrola asarifolia	PYAS	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Mitella nuda	MINU	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Eryngium bungeni	ERPU	25	96.00	0.2132	0.304	0.061	0.191	+0.0	0.50
Elymus innovatus	ELIN	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Carex richardsonii	CARI	25	76.00	0.2404	0.300	0.060	0.348	+0.0	1.00
Carex foenea	CAFO	25	96.00	0.0888	0.101	0.020	0.292	+0.0	0.50
Eryngium eaprifolia	ERAS	25	4.00	0.0004	0.002	0.000	1.000	+0.0	0.01
Agrostis scabra	AGSC	25	4.00	0.0040	0.020	0.004	1.000	+0.0	0.10
Bromus ciliatus	BRCI	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Scrisachne purpurascens	SCPU	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Juncus baltious	JUBA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Elymus glaucus	ELGL	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Calamagrostis canadensis	CACA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Calamagrostis inexpansa	CAIN	25	12.00	0.0244	0.101	0.020	0.838	+0.0	0.50
Festuca saximontana	FESA	25	8.00	0.0044	0.020	0.004	0.910	+0.0	0.10
Bromus pumpellianus	BRPU	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Carex sp.	CASP	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Equisetum variegatum	EQVA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Lycopodium tristachyum	LYTR	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Lycopodium annotinum	LYAN	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Equisetum sylvaticum	EQSY	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Equisetum scirpoides	EQSC	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Selaginella dense	SEDE	25	4.00	0.0004	0.002	0.000	1.000	+0.0	0.01
Equisetum pratense	EQPR	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Lycopodium clavatum	LYCL	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Equisetum arvense	EQAR	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Prunus virginiana	PRVI	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Lonicera villosa	LOVI	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Pedicularis groenlandica	PEGR	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Empetrum nigrum	EMNI	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0

BASED ON 25 POSITIVE MEANS: SIMPSON'S INDEX OF DOMINANCE CONCENTRATION, C = 0.204
SHANNON-WEAVER INDEX OF DIVERSITY, H' = 1.890 (NATURAL LOGS)

25 OF THE 104 VARIABLES HAVE POSITIVE MEANS, WHICH SUM TO 18.8072

Athabasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/07/83 PAGE 25
Descriptive Statistics for Each Species Variable and Each Stand
FILE A0802V2S (CREATION DATE = 04/07/83) Eighteen Stand Tables of 1982 Vascular Cover % Data (5m x 5m)
SUBFILE S01N



Athabasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/07/83 PAGE 61
Descriptive Statistics for Synthetic Variables at Each Stand
FILE A0802V2S (CREATION DATE = 04/07/83) Eighteen Stand Tables of 1982 Vascular Cover % Data (5m x 5m)
SUBFILE S01N

LABEL	VARIABLE	N	PRES %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Soil temperature 5-10 cm degrees F	TEMP	25	100.00	57.6000	0.645	0.129	0.002	55.00	58.00
Total Tree Cover per Plot	TREE	25	100.00	5.6240	4.501	0.900	0.155	0.10	20.00
Tree Species Richness per Plot	TREERP	25	100.00	1.0000	0.0	0.0	0.0	1.00	1.00
Total Shrub Cover per Plot	SHRUB	25	100.00	10.6888	15.723	3.145	0.288	1.00	61.00
Shrub Species Richness per Plot	SHRUBRP	25	100.00	3.7200	1.208	0.242	0.065	1.00	7.00
Total Forb Cover per Plot	FORB	25	88.00	1.3364	0.727	0.145	0.117	0.0	3.03
Forb Species Richness per Plot	FORBRP	25	88.00	3.7200	3.007	0.601	0.068	0.0	13.00
Total Graminoid Cover per Plot	GRAM	25	100.00	0.8888	0.357	0.070	0.143	0.03	1.81
Graminoid Species Richness per Plot	GRAMRP	25	100.00	2.8000	0.735	0.147	0.050	1.00	4.00
Total Pteridophyte Cover per Plot	PTER	25	4.00	0.0004	0.002	0.000	1.000	0.0	0.01
Pteridophyte Species Richness per Plot	PTERRP	25	4.00	0.0400	0.200	0.040	1.000	0.0	1.00
Total Vascular Cover per Plot	TOT	25	100.00	16.5072	15.848	3.169	0.171	4.54	67.23
Species Richness per Plot	TOTRP	25	100.00	10.4400	4.184	0.837	0.081	5.00	23.00

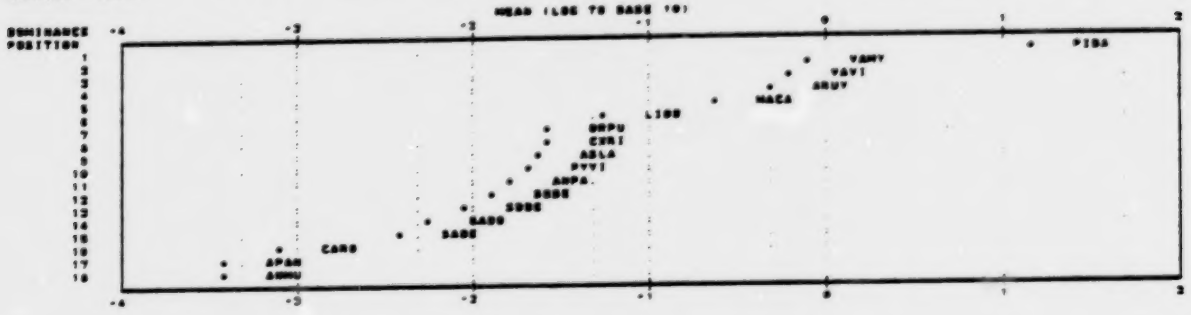
Athabasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/07/83 PAGE 20
Descriptive Statistics for Each Species Variable and Each Stand
FILE A0582V25 (CREATION DATE = 04/07/83) Eighteen Stand Tables of 1982 Vascular Cover % Data (5m x 5m)
SUBFILE '802H'

LABEL	VARIABLE	N	FREQ %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Pinus banksiana	PIBA	25	100.00	13.0200	3.878	0.795	0.057	7.00	20.00
Picea glauca	PIGL	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Picea mariana	PIMA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Populus tremuloides	POTR	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Populus balsamifera	POBA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Betula papyrifera	BEPA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Larix laricina	LALA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Vaccinium myrtilloides	VAMY	25	84.00	0.8284	1.418	0.283	0.342	+0.0	5.00
Vaccinium vitis-idaea	VAVI	25	60.00	0.8360	0.837	0.168	0.353	+0.0	3.00
Arctostaphylos uva-ursi	ARUV	25	52.00	0.4760	0.478	0.095	0.200	+0.0	2.00
Rosa acicularis	ROAC	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Prunus pensylvanica	PRPE	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Amelanchier alnifolia	AMAL	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Rubus strigosus	RUST	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Lonicera dioica	LODI	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Viburnum edule	VIED	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Nuttallia tomentosa	NUTO	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Salix bebbiana	SABE	25	4.00	0.0040	0.020	0.004	1.000	+0.0	0.10
Alnus crispa	ALCR	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Ledum groenlandicum	LEGR	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Salix pseudodentoida	SAPS	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Symphoricarpos albus	SYAL	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Betula pumila	BEPU	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Salix glaucriana	SAGL	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Shepherdia canadensis	SHCA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Salix sp	SASP	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Vaccinium caespitosum	VACA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Salix myrtillifolia	SAMY	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Melanthemum canadense	MACA	25	84.00	0.2384	0.307	0.061	0.259	+0.0	1.00
Aster laevis	ASLA	25	12.00	0.0344	0.101	0.020	0.639	+0.0	0.50
Anemone multifida	ANMU	25	4.00	0.0004	0.002	0.000	1.000	+0.0	0.01
Galium boreale	GABO	25	20.00	0.0056	0.020	0.004	0.715	+0.0	0.10
Melampyrum lineare	MELI	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Linnaea borealis	LIBO	25	20.00	0.0520	0.139	0.028	0.534	+0.0	0.50
Campanula rotundifolia	CARO	25	8.00	0.0008	0.003	0.001	0.832	+0.0	0.01
Solidago decumbens	SODE	25	20.00	0.0052	0.038	0.008	0.838	+0.0	0.10
Viola adunca	VIAD	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Apocynum androsaemifolium	APAN	25	4.00	0.0004	0.002	0.000	1.000	+0.0	0.01
Comandra pallida	COPA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Fragaria virginiana	FRVI	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Potentilla tridentata	POTRI	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Geocaulon lividum	GELI	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Pyrola virens	PYVI	25	32.00	0.0212	0.040	0.008	0.381	+0.0	0.10
Hieracium canadense	HICA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Pyrola secunda	PYSE	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Epilobium angustifolium	EPAN	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Artemisia campestris	ARCA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Aralia nudicaulis	ARNU	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Cornus canadensis	COCA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Lilium philadelphicum	LIPH	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Anemone patens	ANPA	25	24.00	0.0168	0.037	0.007	0.442	+0.0	0.10
Trientalis borealis	TRBO	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Viola renifolia	VIRE	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Goodyera repens	GORE	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Lathyrus ochroleucus	LAOC	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Vicia americana	VIAM	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Petasites palmatus	PEPA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Aster ciliolatus	ASCI	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Achillea millefolium	ACMI	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Antennaria racemosa	ANRA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Draba sp	DRSP	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Senecio sp	SESP	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Senecio sp.	SESE	25	12.00	0.0120	0.033	0.007	0.883	+0.0	0.10
Senecio cymbalarioides	SECY	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Stellaria longipes	STLO	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Ranunculus sp	RACE	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Labiatae sp	MINT	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Geranium bicknellii	GEBI	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Arabis lyallii	ARLY	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Chamaenerium sp	CHEN	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Pedicularis labradorica	PELA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Agoseris flavescens	AGFL	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Gentianella amarella	GEAM	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Rubus acaulis	RUAC	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Pyrola asarifolia	PYAS	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Mitella nuda	MINU	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Oryzopsis pungens	ORPU	25	64.00	0.0280	0.042	0.008	0.297	+0.0	0.10
Elymus innovatus	ELIN	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Carex richardsonii	CARI	25	36.00	0.0252	0.043	0.009	0.341	+0.0	0.10
Carex foenea	CAFO	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Oryzopsis asperifolia	ORAS	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Agrostis scabra	AGSC	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Bromus ciliatus	BRCI	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Scirpodema purpurascens	SCPU	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Juncus balticus	JUBA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Elymus glaucus	ELGL	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Calamagrostis canadensis	CACA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Calamagrostis inexpansa	CAIN	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Festuca saximontana	FESA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Bromus pumellianus	BRPU	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Carex sp	CASP	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Equisetum variegatum	EQVA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Lycopodium tristachyum	LYTR	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Lycopodium annotinum	LYAN	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Equisetum sylvaticum	EQSY	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Equisetum scirpoides	EQSC	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Selaginella sensa	SEDE	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Equisetum pratense	EQPR	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Lycopodium clavatum	LYCL	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Equisetum arvense	EQAR	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Prunus virginiana	PRVI	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Lonicera villosa	LOVI	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Pedicularis groenlandica	PEGR	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Empetrum nigrum	EMNI	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0

BASED ON 18 POSITIVE MEANS. SIMPSON'S INDEX OF DOMINANCE CONCENTRATION, C = 0.736
SHANNON-WEAVER INDEX OF DIVERSITY, H' = 0.654 (NATURAL LOGS)

18 OF THE 104 VARIABLES HAVE POSITIVE MEANS, WHICH SUM TO 15.3004

Atmospheric Oil Sands Ecological Monitoring: August 1983 Surveys 04/07/83 PAGE 27
Descriptive Statistics for Each Species Variable and Each Stand
FILE A8583V3S (CREATION DATE = 04/07/83) Eighteen Stand Tables of 1983 Vascular Cover % Data (Sm x Sm)
SUBFILE S02H



Atmospheric Oil Sands Ecological Monitoring: August 1983 Surveys 04/07/83 PAGE 83
Descriptive Statistics for Synthetic Variables at Each Stand
FILE A8583V3S (CREATION DATE = 04/07/83) Eighteen Stand Tables of 1983 Vascular Cover % Data (Sm x Sm)
SUBFILE S02H

LABEL	VARIABLE	N	PRES %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Soil temperature 5-10 cm degrees F	TEMP	35	100.00	56.0286	0.512	0.183	0.003	55.00	59.00
Total Tree Cover per Plot	TREE	35	100.00	13.0286	2.575	0.795	0.057	7.00	20.00
Tree Species Richness per Plot	TREERP	35	100.00	1.0000	0.0	0.0	0.0	1.00	1.00
Total Shrub Cover per Plot	SHRUB	35	100.00	1.8886	1.041	0.353	0.188	0.10	5.00
Shrub Species Richness per Plot	SHRUBRP	35	100.00	3.4000	1.000	0.290	0.083	1.00	4.00
Total Herb Cover per Plot	HERB	35	85.00	0.3193	0.304	0.089	0.278	0.0	1.10
Herb Species Richness per Plot	HERBRP	35	82.00	2.0000	1.443	0.289	0.144	0.0	5.00
Total Graminoid Cover per Plot	GRAM	35	72.00	0.0833	0.083	0.013	0.237	0.0	0.20
Graminoid Species Richness per Plot	GRAMRP	35	72.00	1.0000	0.756	0.183	0.183	0.0	3.00
Total Pteridophyte Cover per Plot	PTER	35	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pteridophyte Species Richness per Plot	PTERRP	35	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Vascular Cover per Plot	TOT	35	100.00	15.3800	3.105	0.831	0.039	10.00	23.31
Species Richness per Plot	TOTRP	35	100.00	6.4000	3.002	0.818	0.001	3.00	11.00

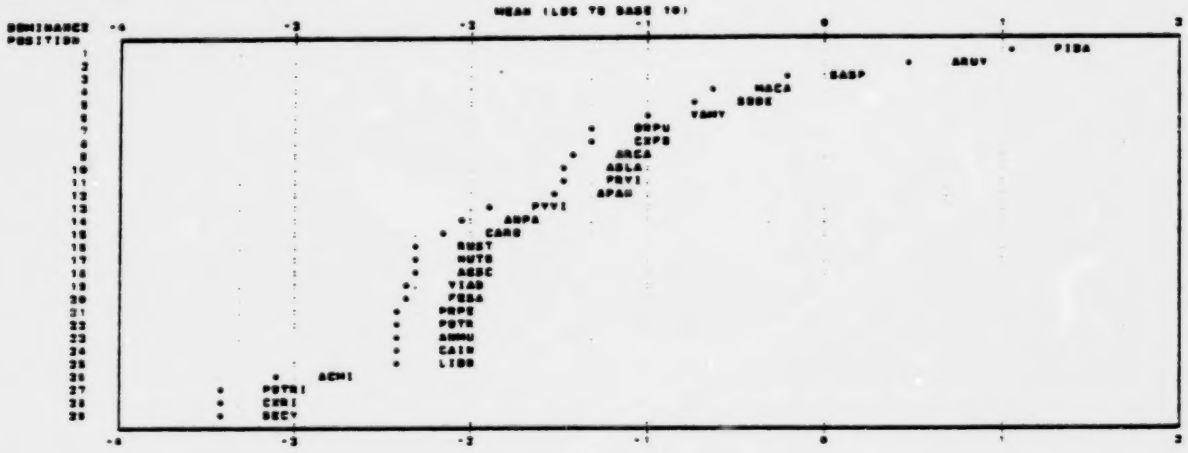
Athabasca Oil Sands Ecological Monitoring, August 1982 Surveys 04/07/83 PAGE 28
Descriptive Statistics for Each Species Variable and Each Stand
FILE A0882V28 (CREATION DATE = 04/07/83) Eighteen Stand Tables of 1982 Vascular Cover % Data (Sm x Sm)
SUBFILE SUM

LABEL	VARIABLE	N	PRES %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Pinus banksiana	PIBA	35	100.00	11.8400	5.083	1.218	0.105	3.00	25.00
Picea glauca	PIGL	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Picea mariana	PIMA	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Populus tremuloides	POTR	35	4.00	0.0040	0.020	0.004	1.000	-0.0	0.10
Populus balsamifera	POBA	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Betula papyrifera	BEPA	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Larix laricina	LALA	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Vaccinium myrtilloides	VAMY	35	8.00	0.1000	0.404	0.083	0.815	-0.0	2.00
Vaccinium vitis-idaea	VAVI	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Arctostaphylos uva-ursi	ARUV	35	100.00	3.0040	1.063	0.224	0.295	0.10	15.00
Rosa acicularis	ROAC	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Prunus pensylvanica	PRPE	35	4.00	0.0040	0.020	0.004	1.000	-0.0	0.10
Amelanchier alnifolia	AMAL	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Rubus strigosus	RUST	35	12.00	0.0040	0.020	0.004	0.834	-0.0	0.10
Lonicera dioica	LODI	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Viburnum edule	VIED	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Rubus pubescens	RUPU	35	12.00	0.0040	0.020	0.004	0.834	-0.0	0.10
Salix bebbiana	SABE	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Alnus crispa	ALCR	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Ledum groenlandicum	LEGR	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Salix pseudomonticola	SAPS	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Symphoricarpos albus	SYAL	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Betula pumila	BEPU	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Salix serulariana	SASE	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Shepherdia canadensis	SHCA	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Salix sp	SASP	35	4.00	0.0000	3.000	0.000	1.000	-0.0	15.00
Vaccinium oxycoccos	VAOX	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Salix myrtillifolia	SAMY	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Maianthemum canadense	MACA	35	84.00	0.2314	0.397	0.088	0.388	-0.0	1.00
Aster laevis	ASLA	35	32.00	0.0338	0.103	0.021	0.610	-0.0	0.50
Anemone multifida	ANMU	35	4.00	0.0040	0.020	0.004	1.000	-0.0	0.10
Salix boreals	SABO	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Melampyrum lineare	MELI	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Linnaea borealis	LIBO	35	4.00	0.0040	0.020	0.004	1.000	-0.0	0.10
Cornus rotundifolia	CARO	35	72.00	0.0972	0.008	0.001	0.127	-0.0	0.01
Solidago decumbens	SODE	35	80.00	0.1841	0.183	0.037	0.188	-0.0	0.80
Viola adunca	VIAD	35	8.00	0.0844	0.020	0.004	0.210	-0.0	0.10
Apocynum androsaemifolium	APAN	35	24.00	0.0292	0.102	0.020	0.688	-0.0	0.50
Comandra pallida	COPA	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Fragaria virginiana	FRVI	35	20.00	0.0324	0.102	0.021	0.635	-0.0	0.50
Potentilla tridentata	POTR1	35	4.00	0.0004	0.002	0.000	1.000	-0.0	0.01
Goodyera livinum	GOLI	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Pyrola virens	PYVI	35	20.00	0.0128	0.033	0.007	0.515	-0.0	0.10
Hieracium canadense	HICA	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Pyrola secunda	PYSE	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Epilobium angustifolium	EPAN	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Artemisia campestris	ARCA	35	84.00	0.0388	0.047	0.008	0.242	-0.0	0.10
Aralia nudicaulis	ARNU	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cornus canadensis	COCA	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lilium philadelphicum	LIPH	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Anemone patens	ANPA	35	20.00	0.0092	0.028	0.005	0.588	-0.0	0.10
Trientalis borealis	TRBO	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Viola renifolia	VIRE	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Goodyera repens	GORE	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lathyrus ochroleucus	LAOC	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Vicia americana	VIAM	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Petasites palmatus	PEPA	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Aster ciliolatus	ASCI	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Achillea millefolium	ACMI	35	4.00	0.0004	0.002	0.000	1.000	-0.0	0.01
Antennaria rosea	ANRA	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Bromus sp	BRSP	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Senecio sp	SESP	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Senecio sp	SESE	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Senecio cymbalarioides	SECY	35	4.00	0.0004	0.002	0.000	1.000	-0.0	0.01
Stellaria longipes	STLO	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Ranunculus sp	RASP	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Labiatae sp	MINT	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Boreonium bickmellii	BEBI	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Arabis lyallii	ARLY	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Chenopodium sp	CHEN	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Pedicularis labradorica	PELA	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Aquilegia flavescens	AQFL	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Gentianella amarella	GEAM	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Rubus acaulis	RUAC	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Pyrola asarifolia	PYAS	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Mitella nuda	MINU	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Drysopsis pungens	DRPU	35	80.00	0.0812	0.048	0.010	0.197	-0.0	0.10
Elymus innovatus	ELIN	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Carex richardsonii	CARI	35	4.00	0.0004	0.002	0.000	1.000	-0.0	0.01
Carex rostrata	CARO	35	100.00	0.0480	0.045	0.009	0.195	0.10	0.10
Drysopsis appressifolia	DRAS	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Agrostis scabra	AGSC	35	12.00	0.0040	0.020	0.004	0.834	-0.0	0.10
Bromus ciliatus	BRCI	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Schizachne purpurascens	SCPU	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Juncus balticus	JUBA	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Elymus glaucus	ELGL	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Calamagrostis canadensis	CACA	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Calamagrostis inexpansa	CAIN	35	4.00	0.0040	0.020	0.004	1.000	-0.0	0.10
Festuca saximontana	FESA	35	4.00	0.0044	0.020	0.004	0.910	-0.0	0.10
Bromus pumpellianus	BRPU	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Carex sp	CASP	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equisetum variegatum	EQVA	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lycopodium tristachyum	LYTR	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lycopodium annotinum	LYAN	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equisetum sylvaticum	EQSY	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equisetum scirpoides	EQSC	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Selaginella dense	SEDE	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equisetum pratense	EQPR	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lycopodium clavatum	LYCL	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equisetum arvense	EQAR	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Prunus virginiana	PRVI	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lonicera villosa	LOVI	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Pedicularis groenlandica	PEGR	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Empetrum nigrum	EMNI	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0

BASED ON 35 POSITIVE MEANS SIMPSON'S INDEX OF DOMINANCE CONCENTRATION, C = 0.869
SHANNON-WEAVER INDEX OF DIVERSITY, H' = 0.838 (NATURAL LOGS)

35 OF THE 104 VARIABLES HAVE POSITIVE MEANS, WHICH SUM TO 15.8180

Athabasca Oil Sands Geological Monitoring: August 1982 Surveys 04/07/83 PAGE 29
Descriptive Statistics for Each Species Variable and Each Stand
FILE A0803Y3S (CREATION DATE = 04/07/83) Eighteen Stand Tables of 1982 Vascular Cover % Data (5m x 5m)
SUBFILE S03N



Athabasca Oil Sands Geological Monitoring August 1982 Surveys 04/07/83 PAGE 63
Descriptive Statistics for Synthetic Variables at Each Stand
FILE A0803Y3S (CREATION DATE = 04/07/83) Eighteen Stand Tables of 1982 Vascular Cover % Data (5m x 5m)
SUBFILE S03N

LABEL	VARIABLE	N	PRES %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Soil temperature 5-10 cm degrees F	TEMP	25	100 00	58 5800	1 314	0 263	0 004	57 00	63 00
Total Tree Cover per Plot	TREE	25	100 00	11 6440	8 886	1 317	0 195	3 00	35 00
Tree Species Richness per Plot	TREERP	25	100 00	1 0400	0 200	0 040	0 038	1 00	2 00
Total Shrub Cover per Plot	SHRUB	25	100 00	3 5816	3 180	0 788	0 212	0 10	15 50
Shrub Species Richness per Plot	SHRUBRP	25	100 00	1 4400	0 583	0 117	0 081	1 00	3 00
Total Forb Cover per Plot	FORB	25	80 00	0 5760	0 520	0 104	0 182	0 0	1 75
Forb Species Richness per Plot	FRBSRP	25	80 00	4 0000	1 683	0 381	0 071	0 0	8 00
Total Graminoid Cover per Plot	GRAM	25	100 00	0 1100	0 068	0 013	0 120	0 01	0 30
Graminoid Species Richness per Plot	GRAMRP	25	100 00	3 0800	0 702	0 140	0 045	1 00	4 00
Total Pteridophyte Cover per Plot	PTER	25	0 0	0 0	0 0	0 0	0 0	0 0	0 0
Pteridophyte Species Richness per Plot	PTERRP	25	0 0	0 0	0 0	0 0	0 0	0 0	0 0
Total Vascular Cover per Plot	TOT	25	100 00	15 5160	7 586	1 520	0 098	4 11	30 82
Species Richness per Plot	TOTRP	25	100 00	9 1600	3 240	0 650	0 040	4 00	16 00

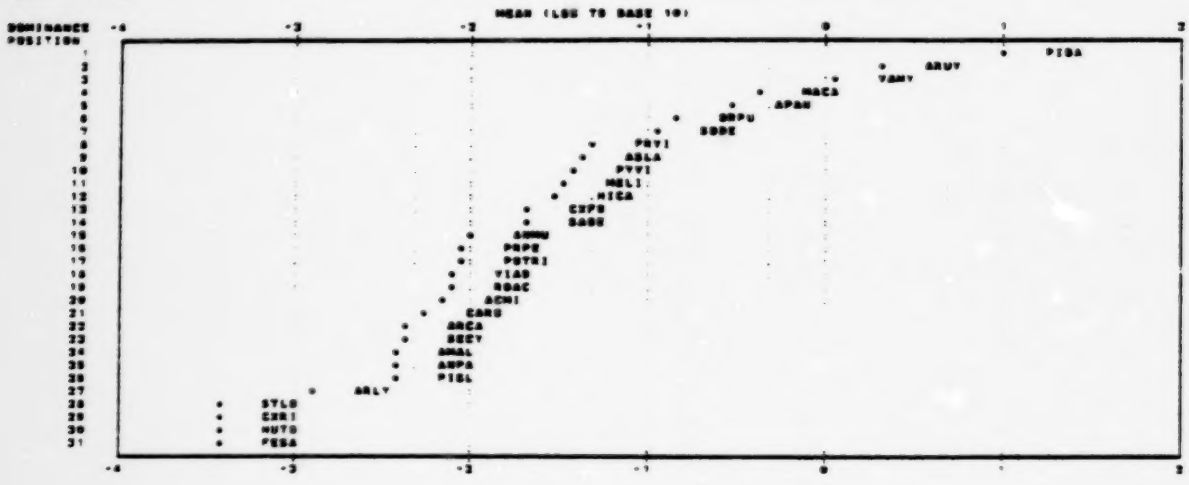
Athabasca Oil Sands Geological Monitoring August 1983 Surveys 04/07/83 PAGE 34
Descriptive Statistics for Each Species Variable and Each Stand
FILE A8983VSS (CREATION DATE = 04/07/83) Eighteen Stand Tables of 1983 Vascular Cover % Data (5m x 5m)
SUBFILE 5mSS

LABEL	VARIABLE	N	PRES %	MEAN	STD DEV	STD ERR	STD DEV /MEAN	MINIMUM	MAXIMUM
Pinus banksiana	PIBA	35	100.00	10.1240	9.180	1.838	0.163	0.10	35.00
Picea glauca	PIGL	35	4.00	0.0040	0.020	0.004	1.000	0.0	0.10
Picea mariana	PIMA	35	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Populus tremuloides	POTR	35	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Populus balsamifera	POBA	35	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Betula papyrifera	BEPA	35	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Larix laricina	LALA	35	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vaccinium myrtilloides	VAMY	35	60.00	1.9720	1.895	0.320	0.316	0.0	7.00
Vaccinium vitis-idaea	VAVI	35	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Arctostaphylos uva-ursi	ARUV	80	80.00	1.8500	1.258	0.262	0.128	0.0	5.00
Rosa acicularis	ROAC	80	8.00	0.0800	0.026	0.005	0.022	0.0	0.10
Prunus pensylvanica	PRPE	35	10.00	0.0800	0.026	0.005	0.027	0.0	0.10
Amelanchier alnifolia	AMAL	35	4.00	0.0040	0.020	0.004	1.000	0.0	0.10
Rubus strigosus	RUST	35	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lonicera dioica	LODI	35	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Viburnum edule	VIED	35	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Hudsonia tomentosa	HUTO	35	4.00	0.0004	0.002	0.000	1.000	0.0	0.01
Salix bebbiana	SABE	35	4.00	0.0200	0.100	0.020	1.000	0.0	0.50
Alnus crispa	ALCR	35	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ledum groenlandicum	LEGR	35	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Salix pseudomonticola	SAPS	35	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Symphoricarpos albus	SYAL	35	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Betula pumila	BEPU	35	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Salix glauca	SAGL	35	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Shepherdia canadensis	SHCA	35	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Salix sp	SASP	35	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vaccinium oxycoccos	VAOX	35	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Salix myrtillifolia	SAMY	35	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Maianthemum canadense	MACA	35	100.00	0.6484	0.693	0.000	0.221	0.01	3.00
Aster laevis	ASLA	35	44.00	0.0404	0.060	0.010	0.245	0.0	0.20
Anemone multifida	ANMU	35	24.00	0.0080	0.027	0.005	0.572	0.0	0.10
Galium boreale	GABO	35	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Melampyrum lineare	MELI	35	24.00	0.0320	0.103	0.021	0.536	0.0	0.50
Linnaea borealis	LIBO	35	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Campanula rotundifolia	CARO	35	52.00	0.0852	0.095	0.001	0.188	0.0	0.01
Solidago decumbens	SODE	35	84.00	0.1140	0.163	0.030	0.287	0.0	0.50
Viola adunca	VIAD	35	4.00	0.0080	0.038	0.006	0.692	0.0	0.10
Apocynum androsaemifolium	APAN	35	84.00	0.3936	0.473	0.080	0.322	0.0	2.00
Comandra pallida	COPA	35	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Fragaria virginiana	FRVI	35	44.00	0.0456	0.104	0.021	0.485	0.0	0.50
Potentilla tridentata	POTRI	35	16.00	0.0068	0.020	0.006	0.527	0.0	0.10
Goodyera tesselata	GOTE	35	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pyrola virens	PYVI	35	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Hieracium canadense	HICA	35	32.00	0.0376	0.068	0.010	0.358	0.0	0.10
Pyrola secunda	PYSE	35	20.00	0.0280	0.102	0.020	0.708	0.0	0.50
Epilobium angustifolium	EPAN	35	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Artemisia campestris	ARCA	35	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Aralia nudicaulis	ARNU	35	4.00	0.0044	0.020	0.004	0.910	0.0	0.10
Cornus canadensis	COCA	35	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lilium philadelphicum	LIPH	35	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Anemone patens	ANPA	35	4.00	0.0040	0.020	0.004	1.000	0.0	0.10
Triantalis borealis	TRBO	35	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Viola renifolia	VIRE	35	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Goodyera repens	GORE	35	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lathyrus ochroleucus	LAOC	35	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vicia americana	VIAM	35	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Petasites palmatus	PEPA	35	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Aster ciliolatus	ASCI	35	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Achillea millefolium	ACMI	35	32.00	0.0068	0.020	0.004	0.527	0.0	0.10
Antennaria racemosa	ANRA	35	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Draba sp	DRSP	35	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Senecio sp	SESP	35	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Senecio sp	SESE	35	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Senecio cymbalarioides	SECY	35	4.00	0.0044	0.020	0.004	0.910	0.0	0.10
Stellaria longipes	STLO	35	4.00	0.0004	0.002	0.000	1.000	0.0	0.01
Ranunculus sp	RACE	35	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Labiatae sp	MINT	35	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Geranium bicknellii	GEBI	35	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Arabis lyallii	ARLY	35	12.00	0.0012	0.003	0.001	0.883	0.0	0.01
Chenopodium sp	CHEN	35	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedicularis labradorica	PELA	35	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Aquilegia flavescens	AQFL	35	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sanicula marilandica	SAMA	35	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rubus acaulis	RUAC	35	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pyrola asarifolia	PYAS	35	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mitella nuda	MINU	35	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Bryoseris pungens	BRPU	35	92.00	0.1492	0.288	0.058	0.387	0.0	1.00
Elymus innovatus	ELIN	35	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Carex richardsonii	CARI	35	4.00	0.0004	0.002	0.000	1.000	0.0	0.01
Carex rossii	CARO	35	16.00	0.0212	0.100	0.020	0.842	0.0	0.50
Bryoseris asperifolia	BRAS	35	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Agrostis scabra	AGSC	35	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Bromus ciliatus	BRCI	35	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Schizachne purpurascens	SCPU	35	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Juncus balticus	JUBA	35	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Elymus glaucus	ELGL	35	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Calamagrostis canadensis	CACA	35	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Calamagrostis inexpansa	CAIN	35	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Festuca saximontana	FESA	35	4.00	0.0004	0.002	0.000	1.000	0.0	0.01
Bromus pumellianus	BRPU	35	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Carex sp	CXSP	35	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Equisetum variegatum	EQVA	35	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lycopodium tristachyum	LYTR	35	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lycopodium annotinum	LYAN	35	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Equisetum sylvaticum	EQSY	35	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Equisetum scirpoides	EQSC	35	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Selaginella sanguinolenta	SESE	35	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Equisetum pratense	EQPR	35	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lycopodium clavatum	LYCL	35	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Equisetum arvense	EQAR	35	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prunus virginiana	PRVI	35	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lonicera villosa	LOVI	35	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedicularis groenlandica	PEGR	35	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Empetrum nigrum	EMNI	35	0.0	0.0	0.0	0.0	0.0	0.0	0.0

BASED ON 31 POSITIVE MEANS SIMPSON'S INDEX OF DOMINANCE CONCENTRATION, C = 0.515
SHANNON-WEAVER INDEX OF DIVERSITY, H' = 1.133 (NATURAL LOGS)

31 OF THE 104 VARIABLES HAVE POSITIVE MEANS, WHICH SUM TO 16.4844

Atmospheric Oil Sands Ecological Monitoring August 1982 Surveys 04/07/83 PAGE 31
Descriptive Statistics for Each Species Variable and Each Stand
FILE A0803V25 (CREATION DATE = 04/07/83) Eighteen Stand Tables of 1982 Vascular Cover % Data (5m x 5m)
SUBFILE 5MAN



Atmospheric Oil Sands Ecological Monitoring August 1982 Surveys 04/07/83 PAGE 34
Descriptive Statistics for Synthetic Variables at Each Stand
FILE A0803V25 (CREATION DATE = 04/07/83) Eighteen Stand Tables of 1982 Vascular Cover % Data (5m x 5m)
SUBFILE 5MAN

LABEL	VARIABLE	N	PRES %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Soil temperature 5-10 cm degrees F	TEMP	25	100 00	51 2000	1 935	0 311	0 005	50 00	55 00
Total Tree Cover per Plot	TREE	25	100 00	10 1200	5 155	1 030	0 102	0 10	25 00
Tree Species Richness per Plot	TREERP	25	100 00	1 0400	0 200	0 040	0 038	1 00	2 00
Total Shrub Cover per Plot	SHRUB	25	100 00	3 0733	1 735	0 347	0 118	0 50	7 00
Shrub Species Richness per Plot	SHRUBRP	25	100 00	1 5200	0 812	0 162	0 065	1 00	4 00
Total Forb Cover per Plot	FORB	25	100 00	1 0520	0 859	0 172	0 157	0 12	3 04
Forb Species Richness per Plot	FORBRP	25	100 00	3 0000	2 041	0 408	0 068	3 00	9 00
Total Graminoid Cover per Plot	GRAM	25	92 00	0 1712	0 301	0 060	0 352	0 0	1 00
Graminoid Species Richness per Plot	GRAMRP	25	92 00	1 1900	0 554	0 111	0 000	0 0	2 00
Total Pteridophyte Cover per Plot	PTER	25	0 0	0 0	0 0	0 0	0 0	0 0	0 0
Pteridophyte Species Richness per Plot	PTERRP	25	0 0	0 0	0 0	0 0	0 0	0 0	0 0
Total Vascular Cover per Plot	TOT	25	100 00	14 4044	9 061	1 810	0 125	2 50	38 53
Species Richness per Plot	TOTRP	25	100 00	10 1200	2 571	0 514	0 051	5 00	15 00

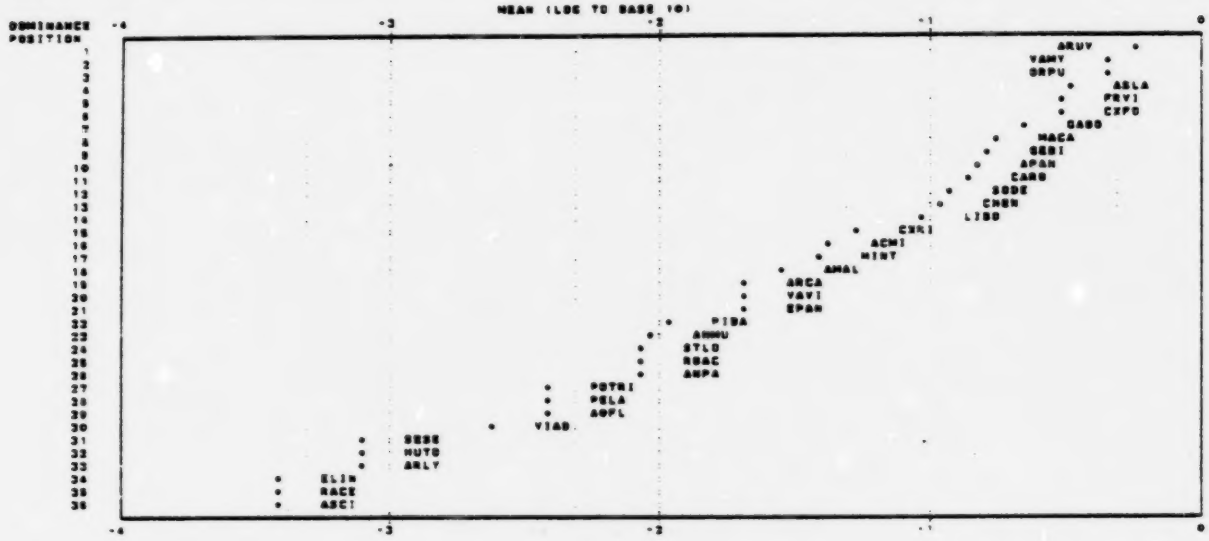
Athabasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/07/83 PAGE 33
Descriptive Statistics for Each Species Variable and Each Stand
FILE ADS82V2S (CREATION DATE = 04/07/83) Eighteen Stand Tables of 1982 Vascular Cover % Data (5m x 5m)
SUBFILE 5018

LABEL	VARIABLE	N	PRES %	MEAN	STD DEV	STD ERR .	STD ERR /MEAN	MINIMUM	MAXIMUM
Pinus banksiana	PIBA	35	78.00	0.0112	0.018	0.004	0.339	-0.0	0.10
Picea glauca	PIGL	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Picea mariana	PIMA	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Populus tremuloides	POTR	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Populus balsamifera	POBA	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Betula papyrifera	BEPA	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Larix laricina	LALA	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Vaccinium myrtilloides	VAMY	35	84.00	0.4840	0.518	0.124	0.287	-0.0	2.00
Vaccinium vitis-idaea	VAVI	35	38.00	0.0208	0.041	0.008	0.380	-0.0	0.10
Arctostaphylos uva-ursi	ARUV	35	100.00	0.8520	0.671	0.094	0.188	0.10	2.00
Rosa acicularis	ROAC	35	13.00	0.0084	0.038	0.006	0.886	-0.0	0.10
Prunus pensylvanica	PRPE	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Amelanchier alnifolia	AMAL	35	13.00	0.0280	0.102	0.030	0.730	-0.0	0.50
Rubus strigosus	RUST	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lonicera dioica	LODI	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Viburnum edule	VIED	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Rudbeckia tomentosa	RUTO	35	3.00	0.0006	0.002	0.001	0.882	-0.0	0.01
Salix bebbiana	SABE	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Alnus crispa	ALCR	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Ledum groenlandicum	LEGR	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Salix pseudomonticola	SAPS	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Symphoricarpos albus	SYAL	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Betula pumila	BEPU	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Salix scouleriana	SASC	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Shepherdia canadensis	SHCA	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Salix sp.	SASP	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Vaccinium caespitosum	VACA	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Salix myrtillifolia	SAMY	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Maianthemum canadense	MACA	35	91.00	0.1780	0.285	0.051	0.288	-0.0	1.00
Aster laevis	ASLA	35	100.00	0.3380	0.311	0.063	0.185	0.10	1.00
Anemone multifida	ANMU	35	20.00	0.0082	0.028	0.005	0.988	-0.0	0.10
Galium boreale	GABO	35	86.00	0.2212	0.448	0.090	0.405	-0.0	2.00
Melampyrum lineare	MELI	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Linnaea borealis	LIBO	35	84.00	0.0882	0.196	0.038	0.438	-0.0	1.00
Campanula rotundifolia	CARO	35	86.00	0.1332	0.142	0.038	0.274	-0.0	0.50
Solidago decumbens	SODE	35	95.00	0.1136	0.122	0.024	0.215	-0.0	0.50
Viola adunca	VIAD	35	34.00	0.0024	0.004	0.001	0.383	-0.0	0.01
Apocynum androsaemifolium	APAN	35	72.00	0.1838	0.263	0.041	0.368	-0.0	0.50
Comandra pallida	COPA	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Fragaria virginiana	FRVI	35	40.00	0.3128	0.381	0.072	0.231	-0.0	1.00
Potentilla tridentata	POTR1	35	6.00	0.0040	0.020	0.004	1.000	-0.0	0.10
Goodyera tesselata	GOTE	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Pyrola virens	PYVI	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Hieracium canadense	HICA	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Pyrola secunda	PYSE	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Epilobium angustifolium	EPAN	35	3.00	0.0204	0.100	0.020	0.980	-0.0	0.50
Artemisia campestris	ARCA	35	13.00	0.0204	0.100	0.020	0.980	-0.0	0.50
Aralia nudicaulis	ARNU	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cornus canadensis	COCA	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lilium philadelphicum	LIPH	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Anemone patens	ANPA	35	12.00	0.0084	0.028	0.006	0.858	-0.0	0.10
Trientalis borealis	TRBO	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Viola renifolia	VIRE	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Goodyera repens	GORE	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lathyrus ochroleucus	LAOC	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Vicia americana	VIAM	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Petasites palmatus	PEPA	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Aster ciliolatus	ASCI	35	3.00	0.0004	0.002	0.000	1.000	-0.0	0.01
Achillea millefolium	ACMI	35	83.00	0.0418	0.049	0.010	0.235	-0.0	0.10
Antennaria racemosa	ANRA	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Draba sp.	DRSP	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Senecio sp.	SESP	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Senecio sp.	SESE	35	3.00	0.0006	0.003	0.001	0.882	-0.0	0.01
Senecio cymbalarioides	SECY	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Stellaria longipes	STLO	35	18.00	0.0086	0.028	0.005	0.827	-0.0	0.10
Ranunculus sp.	RACE	35	4.00	0.0004	0.002	0.000	1.000	-0.0	0.01
Labiatae sp.	MINT	35	4.00	0.0400	0.200	0.040	1.000	-0.0	1.00
Geranium bicknellii	GEBI	35	53.00	0.1580	0.230	0.048	0.291	-0.0	1.00
Arabis lyallii	ARLY	35	8.00	0.0008	0.003	0.001	0.882	-0.0	0.01
Chenopodium sp.	CHEN	35	44.00	0.1048	0.231	0.048	0.442	-0.0	1.00
Pedicularis labradorica	PELA	35	4.00	0.0040	0.020	0.004	1.000	-0.0	0.10
Aquilegia flavescens	AQFL	35	4.00	0.0040	0.020	0.004	1.000	-0.0	0.10
Gentianella amarella	GEAM	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Rubus acaulis	RUAC	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Pyrola asarifolia	PYAS	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Mitella nuda	MINU	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Oryzopsis pungens	ORPU	35	91.00	0.1404	0.285	0.057	0.139	-0.0	1.00
Elymus innovatus	ELIN	35	4.00	0.0004	0.002	0.000	1.000	-0.0	0.01
Carex richardsonii	CARI	35	49.00	0.0524	0.104	0.021	0.336	-0.0	0.50
Carex foenea	CAFO	35	92.00	0.2068	0.281	0.052	0.175	-0.0	1.00
Oryzopsis asperifolia	ORAS	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Agrostis scabra	AGSC	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Bromus ciliatus	BRCI	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Scirpachne purpurascens	SCPU	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Juncus balticus	JUBA	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Elymus glaucus	ELGL	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Calamagrostis canadensis	CACA	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Calamagrostis inexpansa	CAIN	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Festuca saximontana	FESA	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Bromus pumellianus	BRPU	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Carex sp.	CASP	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equisetum variegatum	EQVA	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lycopodium tristachyum	LYTR	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lycopodium annotinum	LYAN	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equisetum sylvaticum	EQSY	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equisetum scirpoides	EQSC	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Selaginella sanguinolenta	SESE	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equisetum pratense	EQPR	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lycopodium clavatum	LYCL	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equisetum arvense	EQAR	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Prunus virginiana	PRVI	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lonicera villosa	LOVI	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Pedicularis groenlandica	PEGR	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Boeotrum nigrum	BRNI	35	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0

BASED ON 35 POSITIVE MEANS SIMPSON'S INDEX OF DOMINANCE CONCENTRATION, C = 0.083
SHANNON-WEAVER INDEX OF DIVERSITY, H' = 2.743 (NATURAL LOGS)

35 OF THE 104 VARIABLES HAVE POSITIVE MEANS, WHICH SUM TO 3.8705

Athabasca Oil Sands Geological Monitoring: August 1982 Surveys 04/07/83 PAGE 33
Descriptive Statistics for Each Species Variable and Each Stand
FILE A0582V3S (CREATION DATE = 04/07/83) Eighteen Stand Tables of 1982 Vascular Cover % Data (5m x 5m)
SUBFILE 3018



Athabasca Oil Sands Geological Monitoring: August 1982 Surveys 04/07/83 PAGE 34
Descriptive Statistics for Synthetic Variables at Each Stand
FILE A0582V3S (CREATION DATE = 04/07/83) Eighteen Stand Tables of 1982 Vascular Cover % Data (5m x 5m)
SUBFILE 3018

LABEL	VARIABLE	N	FREQ %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Soil temperature 5-10 cm degrees F	TEMP	33	100.00	53.7273	0.703	0.150	0.002	52.00	55.00
Total Tree Cover per Plot	TREE	35	78.00	0.0113	0.019	0.004	0.338	0.0	0.10
Tree Species Richness per Plot	TREERP	35	78.00	0.7800	0.438	0.087	0.115	0.0	1.00
Total Shrub Cover per Plot	SHRUB	35	100.00	1.2032	0.939	0.188	0.158	0.10	3.20
Shrub Species Richness per Plot	SHRUBRP	35	100.00	3.8800	1.188	0.233	0.061	1.00	6.00
Total Forb Cover per Plot	FORB	35	100.00	1.8752	1.188	0.234	0.125	0.53	5.23
Forb Species Richness per Plot	FORBRP	35	100.00	8.2000	1.384	0.277	0.030	7.00	12.00
Total Graminoid Cover per Plot	GRAM	35	100.00	0.7500	0.393	0.080	0.070	0.10	1.80
Graminoid Species Richness per Plot	GRAMRP	35	100.00	3.3200	0.755	0.150	0.045	1.00	4.00
Total Pteridophyte Cover per Plot	PTER	35	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pteridophyte Species Richness per Plot	PTERRP	35	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Vascular Cover per Plot	TOT	35	100.00	3.6788	1.883	0.377	0.087	1.55	8.74
Species Richness per Plot	TOTRP	35	100.00	18.1000	2.474	0.486	0.033	10.00	30.00

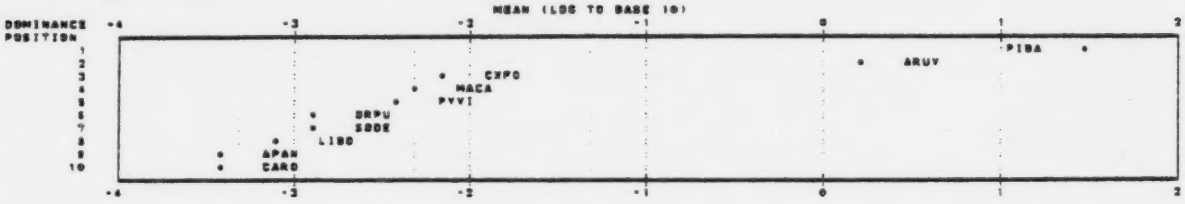
Athabasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/07/83 PAGE 34
Descriptive Statistics for Each Species Variable and Each Stand
FILE A0582926 (CREATION DATE = 04/07/83) Eighteen Stand Tables of 1982 Vascular Cover % Data (5m x 5m)
SUBFILE 802

LABEL	VARIABLE	N	FREQ %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Pinus banksiana	PIBA	25	100.00	35.8000	4.836	0.836	0.032	30.00	40.00
Picea glauca	PIGL	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Picea mariana	PIMA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Populus tremuloides	POTR	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Populus balsamifera	POBA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Betula papyrifera	BEPA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Larix laricina	LALA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Vaccinium myrtilloides	VAMY	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Vaccinium vitis-idaea	VAVI	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Arctostaphylos uva-ursi	ARUV	25	92.00	1.8720	1.485	0.297	0.176	+0.0	+0.0
Rosa acicularis	ROAC	25	0.0	0.0	0.0	0.0	0.0	+0.0	0.00
Prunus pensylvanica	PRPE	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Amelanchier alnifolia	AMAL	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Rubus strigosus	RUST	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Lonicera oblata	LOBI	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Viburnum edule	VIED	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Hudsonia tomentosa	HUTO	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Salix bebbiana	SABE	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Alnus crispa	ALCR	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Ledum groenlandicum	LEGR	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Salix pseudomonticola	SAPS	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Symphoricarpos albus	SYAL	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Betula pumila	BEPU	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Salix scouleriana	SASC	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Shepardia canadensis	SHCA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Salix sp.	SASP	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Vaccinium caespitosum	VACA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Salix myrtillifolia	SAMY	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Maianthemum canadense	MACA	25	12.00	0.0048	0.020	0.004	0.834	+0.0	+0.0
Aster laevis	ASLA	25	0.0	0.0	0.0	0.0	0.0	+0.0	0.10
Anemone multifida	ANMU	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Galium boreale	GABO	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Melampyrum lineare	MELI	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Linnaea borealis	LIBO	25	8.00	0.0008	0.003	0.001	0.882	+0.0	0.01
Campanula rotundifolia	CARO	25	4.00	0.0004	0.002	0.000	1.000	+0.0	0.01
Solidago decumbens	SODE	25	12.00	0.0012	0.003	0.001	0.853	+0.0	0.01
Viola adunca	VIAD	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Apocynum androsaemifolium	APAN	25	4.00	0.0004	0.002	0.000	1.000	+0.0	0.01
Comandra pallida	COPA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Fragaria virginiana	FRVI	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Potentilla tridentata	POTRI	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Geocaulon lividum	GELI	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Pyrola virens	PYVI	25	4.00	0.0040	0.020	0.004	1.000	+0.0	0.10
Hieracium canadense	HICA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Pyrola secunda	PYSE	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Epilobium angustifolium	EPAN	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Artemisia campestris	ARCA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Aralia nudicaulis	ARNU	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Cornus canadensis	COCA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Lilium philadelphicum	LIPH	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Anemone patens	ANPA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Trientalis borealis	TRBO	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Viola renifolia	VIRE	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Goodyera repens	GORE	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Lathyrus ochroleucus	LAOC	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Vicia americana	VIAM	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Petasites palmatus	PEPA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Aster ciliolatus	ASCI	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Achillea millefolium	ACMI	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Antennaria racemosa	ANRA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Draba sp.	DRSP	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Senecio sp.	SESP	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Senecio sp.	SESE	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Senecio cymbalarioides	SECY	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Stellaria longipes	STLO	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Ranunculus sp.	RACE	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Labiatae sp.	MINT	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Geranium bicknellii	GEBI	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Arabis lyallii	ARLY	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Chenopodium sp.	CHEN	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Pedicularis labradorica	PELA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Aquilegia flavescens	AQFL	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Gentianella amarella	GEAM	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Rubus acaulis	RUAC	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Pyrola asarifolia	PYAS	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Mitella nuda	MINU	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Dryopteris dungans	DRPU	25	12.00	0.0012	0.003	0.001	0.853	+0.0	0.01
Elymus innovatus	ELIN	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Carex richardsonii	CARI	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Carex feonea	CXFO	25	32.00	0.0084	0.030	0.004	0.537	+0.0	0.10
Oryzopsis asperifolia	ORAS	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Agrostis scabra	AGSC	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Bromus ciliatus	BRCI	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Schizachne purpurascens	SCPU	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Juncus balticus	JUBA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Elymus glaucus	ELGL	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Calamagrostis canadensis	CACA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Calamagrostis inexpansa	CAIN	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Festuca saximontana	FESA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Bromus pumpellianus	BRPU	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Carex sp.	CXSP	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Equisetum variegatum	EQVA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Lycopodium tristachyum	LYTR	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Lycopodium annotinum	LYAN	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Equisetum sylvaticum	EQSY	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Equisetum scirpoides	EQSC	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Selaginella densa	SEDE	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Equisetum pratense	EQPR	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Lycopodium clavatum	LYCL	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Equisetum arvense	EQAR	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Prunus virginiana	PRVI	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Lonicera villosa	LOVI	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Pedicularis groenlandica	PEGR	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Empetrum nigrum	EMNI	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0

BASED ON 10 POSITIVE MEANS SIMPSON'S INDEX OF DOMINANCE CONCENTRATION, C = 0.885
SHANNON-WEAVER INDEX OF DIVERSITY, H' = 0.219 (NATURAL LOGS)

10 OF THE 104 VARIABLES HAVE POSITIVE MEANS, WHICH SUM TO 30.4916

Athabasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/07/83 PAGE 35
Descriptive Statistics for Each Species Variable and Each Stand
FILE A0582V25 (CREATION DATE = 04/07/83) Eighteen Stand Tables of 1982 Vascular Cover % Data (5m x 5m)
SUBFILE 502



Athabasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/07/83 PAGE 55
Descriptive Statistics for Syntematic Variables at Each Stand
FILE A0582V25 (CREATION DATE = 04/07/83) Eighteen Stand Tables of 1982 Vascular Cover % Data (5m x 5m)
SUBFILE 502

LABEL	VARIABLE	N	PRES %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Soil temperature 5-10 cm degrees F	TEMP	25	100.00	57.5600	0.478	0.095	0.002	57.00	58.00
Total Tree Cover per Plot	TREE	25	100.00	36.6000	4.834	0.826	0.022	30.00	40.00
Tree Species Richness per Plot	TREERP	25	100.00	1.0000	0.0	0.0	0.0	1.00	1.00
Total Shrub Cover per Plot	SHRUB	25	92.00	1.8720	1.485	0.297	0.176	0.0	5.00
Shrub Species Richness per Plot	SHRUBRP	25	52.00	1.0000	0.404	0.082	0.082	0.0	2.00
Total Forb Cover per Plot	FORB	25	20.00	0.0100	0.031	0.006	0.564	0.0	0.12
Forb Species Richness per Plot	FORBRP	25	20.00	0.2800	0.650	0.172	0.474	0.0	2.00
Total Graminoid Cover per Plot	GRAM	25	44.00	0.0060	0.020	0.004	0.635	0.0	0.10
Graminoid Species Richness per Plot	GRAMRP	25	44.00	0.4400	0.507	0.101	0.230	0.0	1.00
Total Pteridophyte Cover per Plot	PTER	25	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pteridophyte Species Richness per Plot	PTERRP	25	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Vascular Cover per Plot	TOT	25	100.00	38.4816	4.890	0.978	0.032	30.02	40.10
Species Richness per Plot	TOTRP	25	100.00	3.8000	1.225	0.245	0.067	1.00	7.00

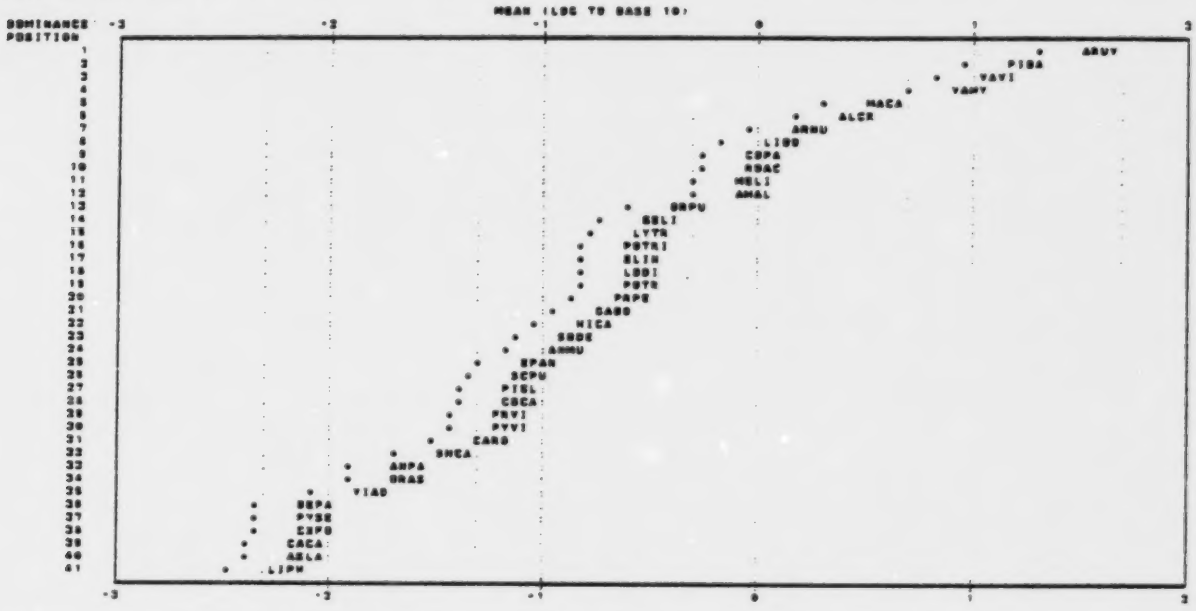
Athabasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/07/83 PAGE 38
Descriptive Statistics for Each Species Variable and Each Stand
FILE A0582V26 (CREATION DATE = 04/07/83) Eighteen Stand Tables of 1982 Vascular Cover % Data (5m x 5m)
SUBFILE 503

LABEL	VARIABLE	N	FREQ %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Pinus banksiana	PIBA	25	100.00	5.3000	5.284	1.057	0.114	0.50	25.00
Picea glauca	PIGL	25	8.00	0.0400	0.138	0.028	0.692	+0.0	0.50
Picea mariana	PIMA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Populus tremuloides	POTR	25	28.00	0.1440	0.289	0.054	0.374	+0.0	1.00
Populus balsamifera	POBA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Betula papyrifera	BEPA	25	8.00	0.0044	0.020	0.004	0.910	+0.0	0.10
Larix laricina	LALA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Vaccinium myrtilloides	VAMY	25	100.00	4.8400	3.322	0.664	0.137	0.50	15.00
Vaccinium vitis-idaea	VAVI	25	100.00	7.0000	3.890	0.778	0.114	2.00	15.00
Arctostaphylos uva-ursi	ARUV	25	100.00	20.4400	8.781	1.782	0.088	7.00	40.00
Rosa acicularis	ROAC	25	40.00	0.5240	0.807	0.161	0.308	+0.0	2.80
Prunus pensylvanica	PRPE	25	40.00	0.1400	0.255	0.051	0.364	+0.0	1.00
Amelanchier alnifolia	AMAL	25	84.00	0.4720	0.558	0.112	0.237	+0.0	2.00
Rubus strigosus	RUST	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Lonicera dioica	LODI	25	24.00	0.1480	0.337	0.067	0.456	+0.0	1.00
Viburnum edule	VIED	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Hudsonia tomentosa	HUTO	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Salix babbiana	SABE	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Alnus crispa	ALCR	25	88.00	1.8400	2.071	0.414	0.269	+0.0	8.00
Lesgum groenlandicum	LEGR	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Salix pseudomonticola	SAPS	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Symphoricarpos albus	SYAL	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Betula pumila	BEPU	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Salix scouleriana	SASC	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Shepardia canadensis	SHCA	25	1.00	0.0200	0.100	0.020	1.000	+0.0	0.50
Salix SP.	SASP	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Vaccinium caespitosum	VACA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Salix myrtillifolia	SAMY	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Maianthemum canadense	MACA	25	84.00	1.9840	1.239	0.248	0.125	+0.0	5.00
Aster laevis	ASLA	25	4.00	0.0040	0.020	0.004	1.000	+0.0	0.10
Anemone multifida	ANMU	25	84.00	0.0892	0.102	0.020	0.285	+0.0	0.50
Galium boreale	GABO	25	48.00	0.1120	0.178	0.036	0.319	+0.0	0.50
Melampyrum lineare	MELI	25	100.00	0.4880	0.368	0.073	0.147	0.10	1.00
Linnaea borealis	LIBO	25	88.00	0.8440	0.784	0.188	0.247	+0.0	3.00
Campanula rotundifolia	CARO	25	84.00	0.0316	0.044	0.009	0.277	+0.0	0.10
Solidago decumbens	SODE	25	40.00	0.0720	0.137	0.027	0.381	+0.0	0.50
Viola adunca	VIAD	25	8.00	0.0080	0.028	0.006	0.892	+0.0	0.10
Apocynum androsaemifolium	APAN	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Comandra pallida	COPA	25	92.00	0.5520	0.416	0.083	0.151	+0.0	2.00
Fragaria virginiana	FRVI	25	20.00	0.0360	0.104	0.021	0.578	+0.0	0.50
Potentilla tridentata	POTRI	25	60.00	0.1496	0.288	0.058	0.387	+0.0	1.00
Saccaulon lividum	SELI	25	12.00	0.1800	0.627	0.125	0.697	+0.0	2.00
Pyrola virens	PYVI	25	20.00	0.0380	0.104	0.021	0.578	+0.0	0.50
Hieracium canadense	HICA	25	36.00	0.0884	0.181	0.032	0.368	+0.0	0.50
Pyrola secunda	PYSE	25	4.00	0.0044	0.020	0.004	0.910	+0.0	0.10
Epilobium angustifolium	EPAN	25	20.00	0.0520	0.139	0.026	0.534	+0.0	0.50
Artemisia campestris	ARCA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Aralia nudicaulis	ARNU	25	80.00	0.8320	1.304	0.261	0.380	+0.0	5.00
Cornus canadensis	COCA	25	4.00	0.0400	0.200	0.040	1.000	+0.0	1.00
Lilium philadelphicum	LIPH	25	32.00	0.0032	0.005	0.001	0.288	+0.0	0.01
Anemone patens	ANPA	25	20.00	0.0128	0.033	0.007	0.515	+0.0	0.10
Trientalis borealis	TRBO	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Viola renifolia	VIRE	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Goodyera repens	GORE	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Lathyrus ochroleucus	LAOC	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Vicia americana	VIAM	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Petasites palmatus	PEPA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Aster ciliolatus	ASCI	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Achillea millefolium	ACMI	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Antennaria racemosa	ANRA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Draba SP	DRSP	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Senecio SP	SESP	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Senecio SP	SESE	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Senecio cymbalarioides	SECY	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Stellaria longipes	STLO	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Ranunculus SP	RACE	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Labiatae SP	MINT	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Geranium bicknellii	GEBI	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Arabis lyallii	ARLY	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Chenopodium SP	CHEN	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Pedicularis labradorica	PELA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Aquilegia flavescens	AQFL	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Gentianella amarella	GEAM	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Rubus acaulis	RUAC	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Pyrola asarifolia	PYAS	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Mitella nuda	MINU	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Oryzopsis pungens	ORPU	25	100.00	0.3486	0.255	0.051	0.204	0.01	1.00
Elymus innovatus	ELIN	25	80.00	0.1492	0.184	0.037	0.247	+0.0	0.50
Carex richardsonii	CXRI	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Carex foenea	CXFO	25	8.00	0.0044	0.020	0.004	0.910	+0.0	0.10
Oryzopsis asperifolia	ORAS	25	20.00	0.0136	0.033	0.007	0.515	+0.0	0.10
Agrostis scabra	AGSC	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Bromus ciliatus	BRCI	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Schizachne purpurascens	SCPU	25	12.00	0.0440	0.139	0.028	0.630	+0.0	0.50
Juncus balticus	JUBA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Elymus glaucus	ELGL	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Calamagrostis canadensis	CACA	25	4.00	0.0040	0.020	0.004	1.000	+0.0	0.10
Calamagrostis inexpansa	CAIN	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Festuca saximontana	FESA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Bromus pumpellianus	BRPU	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Carex SP	CXSP	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Equisetum variegatum	EQVA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Lycopodium tristachyum	LYTR	25	4.00	0.1800	0.624	0.125	0.781	+0.0	3.00
Lycopodium annotinum	LYAN	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Equisetum sylvaticum	EQSY	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Equisetum scirpoides	EQSC	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Selaginella dense	SEDE	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Equisetum pratense	EQPR	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Lycopodium clavatum	LYCL	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Equisetum arvense	EQAR	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Prunus virginiana	PRVI	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Lonicera villosa	LOVI	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Pedicularis groenlandica	PEGR	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Empetrum nigrum	EMNI	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0

BASED ON 41 POSITIVE MEANS: SIMPSON'S INDEX OF DOMINANCE CONCENTRATION, C = 0.227
SHANNON-WEAVER INDEX OF DIVERSITY, H' = 1.885 (NATURAL LOGS)

41 OF THE 104 VARIABLES HAVE POSITIVE MEANS, WHICH SUM TO 80.7440

Athabasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/07/83 PAGE 37
Descriptive Statistics for Each Species Variable and Each Stand
FILE A0582Y3S (CREATION DATE = 04/07/83) Eighteen Stand Tables of 1982 Vascular Cover % Data (5m x 5m)
SUBFILE 803



Athabasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/07/83 PAGE 37
Descriptive Statistics for Synthetic Variables at Each Stand
FILE A0582Y3S (CREATION DATE = 04/07/83) Eighteen Stand Tables of 1982 Vascular Cover % Data (5m x 5m)
SUBFILE 803

LABEL	VARIABLE	N	FREQ %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Soil temperature 5-10 cm degrees F	TEMP	35	100.00	63.8300	1.481	0.370	0.008	61.00	71.00
Total Tree Cover per Plot	TREE	35	100.00	9.4854	5.282	1.055	0.111	0.50	35.00
Tree Species Richness per Plot	TREERP	35	100.00	1.4000	0.583	0.117	0.083	1.00	3.00
Total Shrub Cover per Plot	SHRUB	35	100.00	35.7830	11.439	2.288	0.064	11.50	55.50
Shrub Species Richness per Plot	SHRUBRP	35	100.00	5.1000	1.331	0.268	0.042	3.00	8.00
Total Forb Cover per Plot	FORB	35	100.00	4.8544	2.108	0.422	0.087	2.00	10.01
Forb Species Richness per Plot	FORBRP	35	100.00	6.2000	2.434	0.435	0.058	3.00	12.00
Total Graminoid Cover per Plot	GRAM	35	100.00	0.4840	0.438	0.084	0.181	0.01	1.50
Graminoid Species Richness per Plot	GRAMRP	35	100.00	3.2400	0.723	0.143	0.045	1.00	3.00
Total Pteridophyte Cover per Plot	PTER	35	5.00	0.1000	0.624	0.138	0.781	0.0	3.00
Pteridophyte Species Richness per Plot	PTERRP	35	5.00	0.0800	0.277	0.055	0.692	0.0	1.00
Total Vascular Cover per Plot	TOT	35	100.00	90.7446	13.678	2.715	0.054	15.01	73.70
Species Richness per Plot	TOTRP	35	100.00	18.3000	3.803	0.772	0.042	10.00	24.00

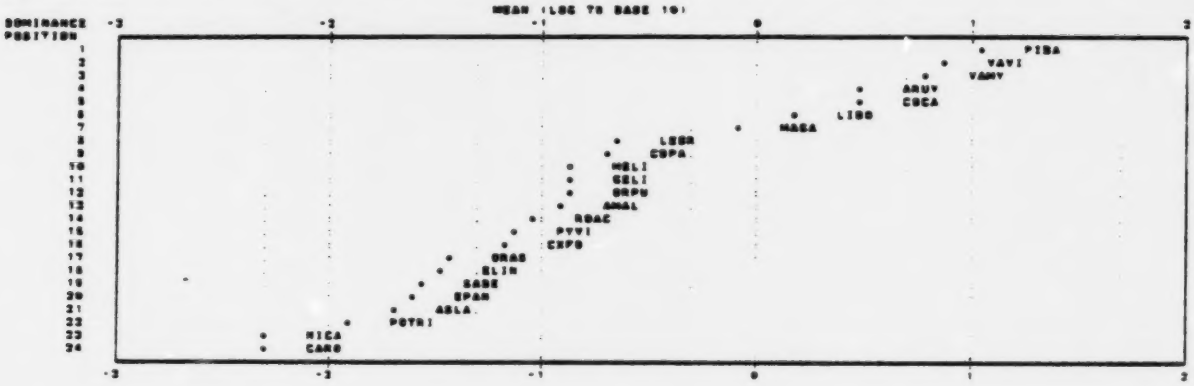
Athabasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/07/83 PAGE 38
Descriptive Statistics for Each Species Variable and Each Stand
FILE A8582V3S (CREATION DATE = 04/07/83) Eighteen Stand Tables of 1982 Vascular Cover % Data (5m x 5m)
SUBFILE 304

LABEL	VARIABLE	N	FREQ %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Pinus banksiana	PIBA	25	100.00	10.8400	5.847	1.129	0.104	4.00	20.00
Picea glauca	PIGL	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Picea mariana	PIMA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Populus tremuloides	POTR	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Populus balsamifera	POBA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Betula papyrifera	BEPA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Larix laricina	LALA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Vaccinium myrtilloides	VAMY	25	100.00	5.8800	2.726	0.545	0.093	1.00	10.00
Vaccinium vitis-idaea	VAVI	25	88.00	7.3800	5.639	1.388	0.188	+0.0	25.00
Arctostaphylos uva-ursi	ARUV	25	88.00	3.9240	2.348	0.470	0.161	+0.0	10.00
Rosa acicularis	ROAC	25	24.00	0.0920	0.234	0.047	0.510	+0.0	1.00
Prunus pensylvanica	PRPE	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Amelanchier alnifolia	AMAL	25	44.00	0.1172	0.246	0.049	0.418	+0.0	1.00
Rubus strigosus	RUST	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Lonicera dioica	LODI	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Viburnum edule	VIED	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Hudsonia tomentosa	HUTO	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Salix bebbiana	SABE	25	12.00	0.0280	0.102	0.020	0.730	+0.0	0.50
Alnus crispa	ALCR	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Ledum groenlandicum	LEGR	25	16.00	0.2240	0.707	0.141	0.631	+0.0	3.00
Salix pseudomonticola	SAPS	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Symphoricarpos albus	SYAL	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Betula pumila	BEPU	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Salix secuelariana	SABC	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Shepherdia canadensis	SHCA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Salix sp.	SASP	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Vaccinium caespitosum	VACA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Salix myrtillifolia	SAMY	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Maianthemum canadense	MACA	25	100.00	0.8480	0.587	0.118	0.141	0.10	3.00
Aster laevis	ASLA	25	4.00	0.0200	0.100	0.020	1.000	+0.0	0.50
Anemone multifida	ANMU	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Galium boreale	GABO	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Melampyrum lineare	MELI	25	84.00	0.1412	0.185	0.033	0.233	+0.0	0.50
Linnaea borealis	LIBO	25	92.00	1.4720	1.252	0.250	0.170	+0.0	5.00
Campanula rotundifolia	CARO	25	44.00	0.0048	0.005	0.001	0.212	+0.0	0.01
Solidago decumbens	SODE	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Viola adunca	VIAD	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Apocynum androsaemifolium	APAN	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Comandra pallida	COPA	25	84.00	0.3988	0.288	0.084	0.297	+0.0	1.00
Fragaria virginiana	FRVI	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Potentilla tridentata	POTRI	25	20.00	0.0128	0.033	0.007	0.515	+0.0	0.10
Geocaulon lividum	GELI	25	12.00	0.1400	0.445	0.089	0.636	+0.0	2.00
Pyrola virens	PYVI	25	84.00	0.0788	0.101	0.020	0.282	+0.0	0.50
Hieracium canadense	HICA	25	16.00	0.0052	0.020	0.004	0.770	+0.0	0.10
Pyrola secunda	PYSE	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Epilobium angustifolium	EPAN	25	12.00	0.0344	0.101	0.020	0.589	+0.0	0.50
Artemisia campestris	ARCA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Aralia nudicaulis	ARNU	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Cornus canadensis	COCA	25	88.00	2.0720	3.884	1.773	0.817	+0.0	48.00
Lilium philadelphicum	LIPH	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Anemone patens	ANPA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Trientalis borealis	TRBO	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Viola renifolia	VIRE	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Goodyera repens	GORE	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Lathyrus ochroleucus	LAOC	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Vicia americana	VIAM	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Potasites palmatus	PEPA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Aster ciliolatus	ASCI	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Achillea millefolium	ACMI	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Antennaria racemosa	ANRA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Draba sp.	DRSP	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Senecio sp.	SESP	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Senecio sp.	SESE	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Senecio cymbalarioides	SECY	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Stellaria longipes	STLO	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Ranunculus sp.	RACE	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Labiatae sp.	MINT	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Geranium bicknellii	GEBI	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Arabis lyallii	ARLY	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Chenopodium sp.	CHEN	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Pedicularis labradorica	PELA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Aquilegia flavescens	AQFL	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Gentianella amarella	GEAM	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Rubus acaulis	RUAC	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Pyrola asarifolia	PYAS	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Mitella nuda	MINU	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Oryzopsis pungens	ORPU	25	100.00	0.1336	0.142	0.028	0.213	0.01	0.50
Elymus innovatus	ELIN	25	96.00	0.0332	0.103	0.021	0.618	+0.0	0.50
Carex richardsonii	CARI	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Carex foenea	CAFO	25	88.00	0.0072	0.046	0.009	0.133	+0.0	0.10
Oryzopsis asperifolia	ORAS	25	48.00	0.0352	0.102	0.020	0.580	+0.0	0.50
Agrostis scabra	AGSC	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Bromus ciliatus	BRCI	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Schizachne purpurascens	SCPU	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Juncus balticus	JUBA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Elymus glaucus	ELGL	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Calamagrostis canadensis	CACA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Calamagrostis inexpansa	CAIN	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Festuca saximontana	FESA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Bromus pumpellianus	BRPU	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Carex sp.	CASP	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Equisetum variegatum	EQVA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Lycopodium tristachyum	LYTR	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Lycopodium annotinum	LYAN	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Equisetum sylvaticum	EQSY	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Equisetum scirpoides	EQSC	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Selaginella dense	SEDE	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Equisetum pratense	EQPR	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Lycopodium clavatum	LYCL	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Equisetum arvense	EQAR	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Prunus virginiana	PRVI	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Lonicera villosa	LOVI	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Pedicularis groenlandica	PEGR	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Empetrum nigrum	EMNI	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0

BASED ON 24 POSITIVE MEANS SIMPSON'S INDEX OF DOMINANCE CONCENTRATION, C = 0.201
SHANNON-WEAVER INDEX OF DIVERSITY, H' = 1.688 (NATURAL LOGS)

24 OF THE 104 VARIABLES HAVE POSITIVE MEANS, WHICH SUM TO 33.8804

Atmospheric Oil Sands Ecological Monitoring: August 1982 Surveys 04/07/83 PAGE 38
Descriptive Statistics for Each Species Variable and Each Stand
FILE A0582V2S (CREATION DATE = 04/07/83) Eighteen Stand Tables of 1982 Vascular Cover % Data (5m x 5m)
SUBFILE 304



Atmospheric Oil Sands Ecological Monitoring: August 1982 Surveys 04/07/83 PAGE 44
Descriptive Statistics for Syntactic Variables at Each Stand
FILE A0582V2S (CREATION DATE = 04/07/83) Eighteen Stand Tables of 1982 Vascular Cover % Data (5m x 5m)
SUBFILE 304

LABEL	VARIABLE	N	FREQ %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Soil temperature 5-10 cm degrees F	TEMP	25	100.00	53.2000	1.155	0.231	0.004	54.00	55.00
Total Tree Cover per Plot	TREE	25	100.00	10.8400	5.847	1.129	0.104	4.00	20.00
Tree Species Richness per Plot	TREERP	25	100.00	1.0000	0.0	0.0	0.0	1.00	1.00
Total Shrub Cover per Plot	SHRUB	25	100.00	18.1173	6.355	1.671	0.092	4.51	40.10
Shrub Species Richness per Plot	SHRUBRP	25	100.00	4.6000	0.866	0.173	0.038	4.00	7.00
Total Herb Cover per Plot	HERB	25	100.00	4.3540	0.384	1.673	0.430	0.22	48.71
Herb Species Richness per Plot	HERBRP	25	100.00	5.2400	1.128	0.226	0.043	3.00	8.00
Total Graminoid Cover per Plot	GRAM	25	100.00	0.2832	0.248	0.048	0.170	0.11	1.20
Graminoid Species Richness per Plot	GRAMRP	25	100.00	3.7200	0.676	0.135	0.000	2.00	4.00
Total Pteridophyte Cover per Plot	PTER	25	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pteridophyte Species Richness per Plot	PTERRP	25	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Vascular Cover per Plot	TOT	25	100.00	33.5404	17.382	3.450	0.103	10.03	88.02
Species Richness per Plot	TOTRP	25	100.00	13.7600	1.783	0.383	0.028	11.00	18.00

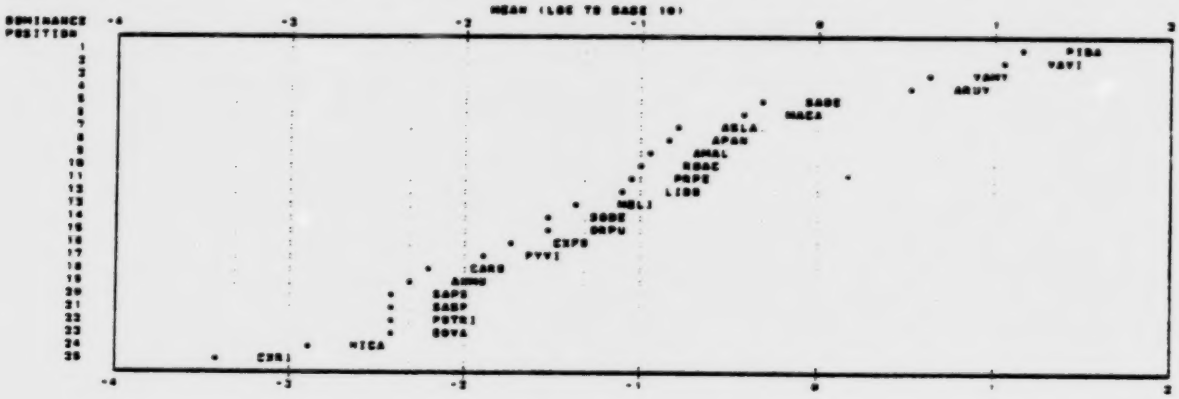
Athabasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/07/83 PAGE 46
Descriptive Statistics for Each Species Variable and Each Stand
FILE ADS82V2S (CREATION DATE = 04/07/83) Eighteen Stand Tables of 1982 Vascular Cover % Data (Sm x Sm)
SUBFILE SMS

LABEL	VARIABLE	N	PRES %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Pinus banksiana	PIBA	25	100.00	15.2400	8.343	1.669	0.109	4.00	30.00
Picea glauca	PIGL	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Picea mariana	PIMA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Populus tremuloides	POTR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Populus balsamifera	POBA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Betula papyrifera	BEPA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Larix laricina	LALA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Vaccinium myrtilloides	VAMY	25	100.00	4.4200	2.887	0.577	0.130	0.50	15.00
Vaccinium vitis-idaea	VAVI	25	100.00	10.8400	7.181	1.436	0.135	2.00	25.00
Arctostaphylos uva-ursi	ARUV	25	88.00	3.1840	3.637	0.807	0.181	-0.0	12.00
Rosa acicularis	ROAC	25	16.00	0.1000	0.250	0.050	0.500	-0.0	1.00
Prunus pensylvanica	PRPE	25	80.00	0.0884	0.133	0.027	0.301	-0.0	0.50
Amelanchier alnifolia	AMAL	25	44.00	0.1172	0.248	0.049	0.419	-0.0	1.00
Rubus strigosus	RUST	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lonicera dioica	LODI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Viburnum edule	VIED	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Hudsonia tomentosa	HUTO	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Salix bebbiana	SABE	25	40.00	0.4804	0.395	0.179	0.373	-0.0	3.00
Alnus crispa	ALCR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Ledum groenlandicum	LEGR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Salix pseudomonticola	SAPS	25	4.00	0.0040	0.020	0.004	1.000	-0.0	0.10
Symphoricarpos albus	SYAL	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Betula pumila	BEPU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Salix scouleriana	SASC	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Shepherdia canadensis	SHCA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Salix sp.	SASP	25	4.00	0.0040	0.020	0.004	1.000	-0.0	0.10
Vaccinium oxycoccos	VACA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Salix myrtillifolia	SAMY	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Maianthemum canadense	MACA	25	100.00	0.3784	0.274	0.055	0.145	0.01	1.00
Aster laevis	ASLA	25	76.00	0.1584	0.285	0.057	0.361	-0.0	1.00
Anemone multifida	ANMU	25	12.00	0.0048	0.020	0.004	0.834	-0.0	0.10
Salix barclaji	SABB	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Melampyrum lineare	MELI	25	12.00	0.0444	0.200	0.040	0.901	-0.0	1.00
Linnaea borealis	LIBO	25	4.00	0.0800	0.400	0.080	1.000	-0.0	2.00
Campanula rotundifolia	CARO	25	24.00	0.0840	0.020	0.004	0.047	-0.0	0.10
Solidago decumbens	SODE	25	64.00	0.0368	0.044	0.009	0.247	-0.0	0.10
Viola adunca	VIAD	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Apocynum androsaemifolium	APAN	25	76.00	0.1384	0.238	0.048	0.344	-0.0	1.00
Comandra pallida	COPA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Fragaria virginiana	FRVI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Potentilla tridentata	POTRI	25	4.00	0.0040	0.020	0.004	1.000	-0.0	0.10
Geocaulon lividum	GELI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Pyrola virens	PYVI	25	20.00	0.0128	0.033	0.007	0.515	-0.0	0.10
Hieracium canadense	HICA	25	12.00	0.0012	0.003	0.001	0.883	-0.0	0.01
Pyrola secunda	PYSE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Epilobium angustifolium	EPAN	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Artemisia campestris	ARCA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Aralia nudicaulis	ARNU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cornus canadensis	COCA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lilium philadelphicum	LIPH	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Anemone patens	ANPA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Trientalis borealis	TRBO	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Viola renifolia	VIRE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Goodyera repens	GORE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lathyrus ochroleucus	LAOC	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Vicia americana	VIAM	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Petasites palmatus	PEPA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Aster ciliolatus	ASCI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Achillea millefolium	ACMI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Antennaria rosacea	ANRA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Draba sp.	DRSP	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Senecio sp	SESP	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Senecio sp	SESE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Senecio cymbalarioides	SECY	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Stellaria longipes	STLO	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Ranunculus sp	RACE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Labiatae sp	MINT	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Geranium bicknellii	GEBI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Arabis lyallii	ARLY	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Chenopodium sp	CHEN	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Pedicularis labradorica	PELA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Aquilegia flavescens	AQFL	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Gentianella amarella	GEAM	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Rubus acaulis	RUAC	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Pyrola asarifolia	PYAS	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Mitella nuda	MINU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Oryzopsis pungens	ORPU	25	88.00	0.0304	0.040	0.008	0.263	-0.0	0.10
Elymus innovatus	ELIN	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Carex richardsonii	CARI	25	4.00	0.0004	0.002	0.000	1.000	-0.0	0.01
Carex foenea	CAFO	25	72.00	0.0180	0.031	0.006	0.347	-0.0	0.10
Oryzopsis asperifolia	ORAS	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Agrostis scabra	AGSC	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Bromus ciliatus	BRCI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Scribaechne purpurascens	SCPU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Juncus balticus	JUBA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Elymus glaucus	ELGL	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Calamagrostis canadensis	CACA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Calamagrostis inexpansa	CAIN	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Festuca saximontana	FESA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Bromus pumellianus	BRPU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Carex sp.	CASP	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equisetum variegatum	EQVA	25	4.00	0.0040	0.020	0.004	1.000	-0.0	0.10
Lycopodium tristachyum	LYTR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lycopodium annotinum	LYAN	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equisetum sylvaticum	EQSY	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equisetum scirpoides	EQSC	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Selaginella densa	SEDE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equisetum pratense	EQPR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lycopodium clavatum	LYCL	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equisetum arvense	EQAR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Prunus virginiana	PRVI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lonicera villosa	LOVI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Pedicularis groenlandica	PEGR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Empetrum nigrum	EMNI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0

BASED ON 25 POSITIVE MEANS SIMPSON'S INDEX OF DOMINANCE CONCENTRATION, C = 0.303
SHANNON-WEAVER INDEX OF DIVERSITY, H' = 1.485 (NATURAL LOGS)

25 OF THE 104 VARIABLES HAVE POSITIVE MEANS, WHICH SUM TO 35.1880

Athabasca Oil Sands Geological Monitoring: ...st 1983 Surveys 04/07/83 PAGE 41
Descriptive Statistics for Each Species ...ots and Each Stand
FILE A0583V35 (CREATION DATE = 04/07/83) Eighteen Stand Tables of 1983 Vascular Cover % Data (5m x 5m)
SUBFILE S05



Athabasca Oil Sands Geological Monitoring: August 1983 Surveys 04/07/83 PAGE 69
Descriptive Statistics for Synthetic Variables at Each Stand
FILE A0583V35 (CREATION DATE = 04/07/83) Eighteen Stand Tables of 1983 Vascular Cover % Data (5m x 5m)
SUBFILE S05

LABEL	VARIABLE	N	FREQ %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Soil temperature 5-10 cm degrees F	TEMP	35	100.00	57.6400	0.534	0.111	0.002	57.00	58.00
Total Tree Cover per Plot	TREE	35	100.00	15.2400	6.343	1.889	0.100	4.00	30.00
Tree Species Richness per Plot	TREERP	35	100.00	1.0000	0.0	0.0	0.0	1.00	1.00
Total Shrub Cover per Plot	SHRUB	35	100.00	15.1138	8.904	1.761	0.093	6.50	41.40
Shrub Species Richness per Plot	SHRUBRP	35	100.00	4.8000	1.930	0.306	0.064	3.00	7.00
Total Forb Cover per Plot	FORB	35	100.00	0.7772	0.568	0.102	0.131	0.01	2.12
Forb Species Richness per Plot	FORBRP	35	100.00	3.8300	1.470	0.284	0.075	1.00	8.00
Total Graminoid Cover per Plot	GRAM	35	100.00	0.0452	0.044	0.008	0.173	0.01	0.11
Graminoid Species Richness per Plot	GRAMRP	35	100.00	1.5400	0.420	0.0725	0.050	1.00	2.00
Total Pteridophyte Cover per Plot	PTER	35	4.00	0.0040	0.039	0.006	1.000	0.0	0.10
Pteridophyte Species Richness per Plot	PTERRP	35	4.00	0.0400	0.200	0.040	1.000	0.0	1.00
Total Vascular Cover per Plot	TOT	35	100.00	35.1850	13.423	2.688	0.075	12.83	69.41
Species Richness per Plot	TOTRP	35	100.00	11.2800	1.588	0.314	0.028	8.00	15.00

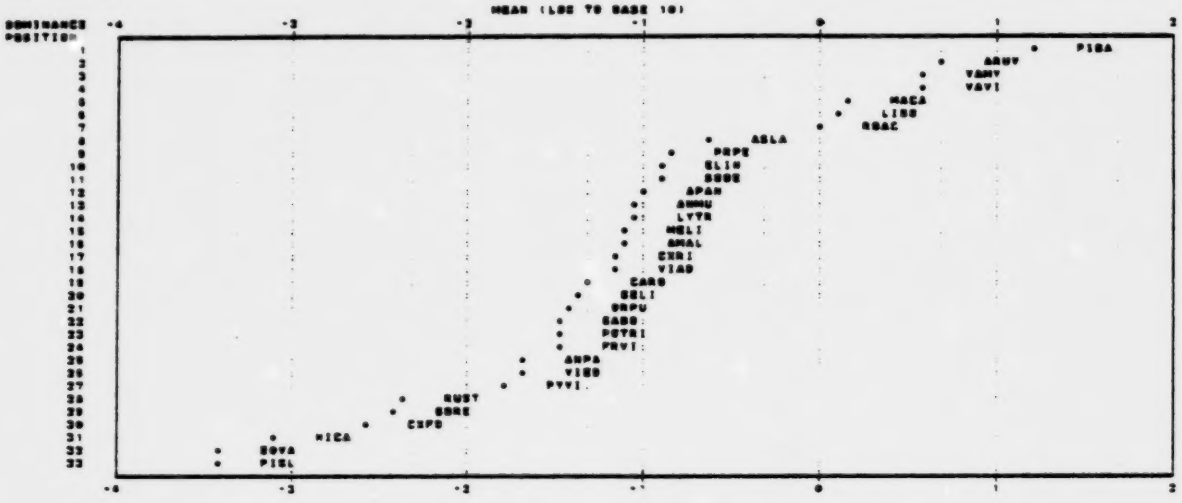
Athabasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/07/83 PAGE 43
Descriptive Statistics for Each Species Variable and Each Stand
FILE A0582V25 (CREATION DATE = 04/07/83) Eighteen Stand Tables of 1982 Vascular Cover % Data (5m x 5m)
SUBFILE 507

LABEL	VARIABLE	N	PRES %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Pinus banksiana	PIBA	25	100.00	15.7200	7.402	1.480	0.094	4.00	30.00
Picea glauca	PIGL	25	4.00	0.0004	0.002	0.000	1.000	-0.0	0.01
Picea mariana	PIMA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Populus tremuloides	POTR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Populus balsamifera	POBA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Betula papyrifera	BEPA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Larix laricina	LALA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Vaccinium myrtilloides	VAMY	25	100.00	4.0040	3.881	0.820	0.122	0.10	10.00
Vaccinium vitis-idaea	VAVI	25	100.00	3.8200	1.447	0.289	0.054	1.00	10.00
Arctostaphylos uva-ursi	ARUV	25	88.00	1.8040	3.018	0.784	0.170	-0.0	10.00
Rosa acicularis	ROAC	25	68.00	0.9440	0.984	0.193	0.203	-0.0	3.00
Prunus pensylvanica	PRPE	25	80.00	0.1488	0.208	0.041	0.277	-0.0	0.80
Amelanchier alnifolia	AMAL	25	92.00	0.9760	0.138	0.027	0.284	-0.0	0.50
Rubus strigosus	RUST	25	8.00	0.0044	0.020	0.004	0.910	-0.0	0.10
Lonicera dioica	LODI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Viburnum edule	VIED	25	4.00	0.0200	0.100	0.020	1.000	-0.0	0.50
Hudsonia tomentosa	HUTO	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Salix bebbiana	SABE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Alnus crispa	ALCR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Ledum groenlandicum	LEGR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Salix pseudomonticola	SAPS	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Symphoricarpos albus	SYAL	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Betula pumila	BEPU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Salix serissima	SASE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Shepardia canadensis	SHCA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Salix sp	SASP	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Vaccinium caespitosum	VACA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Salix myrtillifolia	SAMY	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Maianthemum canadense	MACA	25	100.00	1.4320	0.870	0.188	0.137	0.10	4.00
Aster laevis	ASLA	25	92.00	0.2388	0.288	0.058	0.243	-0.0	1.00
Anemone multifida	ANMU	25	76.00	0.0836	0.131	0.026	0.280	-0.0	0.50
Galium boreale	GABO	25	72.00	0.0324	0.043	0.009	0.287	-0.0	0.10
Melampyrum lineare	MELI	25	32.00	0.0804	0.218	0.044	0.542	-0.0	1.00
Linnaea borealis	LIBO	25	84.00	1.2180	2.407	0.481	0.395	-0.0	13.00
Campanula rotundifolia	CARO	25	72.00	0.0488	0.048	0.010	0.208	-0.0	0.10
Solidago decumbens	SODE	25	80.00	0.1200	0.148	0.030	0.247	-0.0	0.80
Viola adunca	VIAD	25	64.00	0.0680	0.048	0.009	0.141	-0.0	0.10
Apocynum androsaemifolium	APAN	25	48.00	0.0880	0.189	0.032	0.333	-0.0	0.80
Comandra pallida	COPA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Fragaria virginiana	FRVI	25	16.00	0.0320	0.103	0.021	0.643	-0.0	0.50
Potentilla tridentata	POTRI	25	16.00	0.0320	0.103	0.021	0.643	-0.0	0.50
Goodyera livida	GELI	25	16.00	0.0048	0.208	0.040	0.833	-0.0	0.10
Pyrola virens	PYVI	25	28.00	0.0172	0.037	0.007	0.431	-0.0	0.10
Hieracium canadense	HICA	25	4.00	0.0008	0.003	0.001	0.852	-0.0	0.01
Pyrola secunda	PYSE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Epilobium angustifolium	EPAN	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Artemisia campestris	ARCA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Aralia nudicaulis	ARNU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cornus canadensis	COCA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lilium philadelphicum	LIPH	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Anemone patens	ANPA	25	12.00	0.0304	0.100	0.020	0.660	-0.0	0.50
Triantalis borealis	TRBO	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Viola renifolia	VIRE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Goodyera repens	GORE	25	4.00	0.0040	0.020	0.004	1.000	-0.0	0.10
Lathyrus ochroleucus	LAOC	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Viola americana	VIAM	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Petasites palmatus	PEPA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Aster ciliolatus	ASCI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Achillea millefolium	ACMI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Antennaria rosea	ANRA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Draba sp	DRSP	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Senecio sp	SESP	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Senecio sp	SESE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Senecio cymbalarioides	SECY	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Stellaria longipes	STLO	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Ranunculus sp	RACE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Labiatae sp	MINT	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Geranium Bicknellii	GEBI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Arabis lyallii	ARLY	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Chenopodium sp	CHEN	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Pedicularis labradorica	PELA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Aquilegia flavescens	AQFL	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Gentianella amarella	GEAM	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Rubus acaulis	RUAC	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Pyrola asarifolia	PYAS	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Mitella nuda	MINU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Oryzopsis bungens	ORPU	25	80.00	0.0384	0.044	0.009	0.241	-0.0	0.10
Elymus innovatus	ELIN	25	80.00	0.1360	0.172	0.034	0.274	-0.0	0.50
Carex richardsonii	CERI	25	52.00	0.0732	0.138	0.027	0.373	-0.0	0.50
Oryzopsis asperifolia	ORAS	25	28.00	0.0036	0.005	0.001	0.327	-0.0	0.01
Agrostis scabra	AGSC	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Bromus ciliatus	BRCI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Scirpodendron purpurascens	SCPU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Juncus balticus	JUBA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Elymus glaucus	ELGL	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Calamagrostis canadensis	CACA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Calamagrostis inexpansa	CAIN	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Festuca saximontana	FESA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Bromus pumpellianus	BRPU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Carex sp	CASP	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equisetum variegatum	EQVA	25	4.00	0.0004	0.002	0.000	1.000	-0.0	0.01
Lycopodium tristachyum	LYTR	25	20.00	0.0880	0.235	0.047	0.534	-0.0	1.00
Lycopodium annotinum	LYAN	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equisetum sylvaticum	EQSY	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equisetum scirpoides	EQSC	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Selaginella densa	SEDE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equisetum pratense	EQPR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lycopodium clavatum	LYCL	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equisetum arvense	EQAR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Prunus virginiana	PRVI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lonicera villosa	LOVI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Pedicularis groenlandica	PEGR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Empetrum nigrum	EMNI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0

BASED ON 33 POSITIVE MEANS SIMPSON'S INDEX OF DOMINANCE CONCENTRATION, C = 0.274
SHANNON-WEAVER INDEX OF DIVERSITY, H' = 1.787 (NATURAL LOGS)

33 OF THE 104 VARIABLES HAVE POSITIVE MEANS, WHICH SUM TO 33.3480

Atmadoss Oil Sands Ecological Monitoring: August 1982 Surveys 04/07/83 PAGE 43
Descriptive Statistics for Each Species Variable and Each Stand
FILE A0882V2S (CREATION DATE = 04/07/83) Eighteen Stand Tables of 1982 Vascular Cover % Data (5m x 5m)
SUBFILE 307



Atmadoss Oil Sands Ecological Monitoring August 1982 Surveys 04/07/83 PAGE 76
Descriptive Statistics for Synthetic Variables at Each Stand
FILE A0882V2S (CREATION DATE = 04/07/83) Eighteen Stand Tables of 1982 Vascular Cover % Data (5m x 5m)
SUBFILE 307

LABEL	VARIABLE	N	FREQ %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Soil temperature 5-10 cm degrees F	TEMP	35	100.00	56.8800	6.670	0.126	0.002	50.00	80.00
Total Tree Cover per Plot	TREE	35	100.00	15.7204	7.402	1.440	0.094	4.00	30.00
Tree Species Richness per Plot	TREERP	35	100.00	1.0400	0.200	0.040	0.036	1.00	2.00
Total Shrub Cover per Plot	SHRUB	35	100.00	14.9420	6.648	1.305	0.092	5.10	29.70
Shrub Species Richness per Plot	SHRUBRP	35	100.00	5.0200	1.115	0.233	0.026	4.00	8.00
Total Herb Cover per Plot	HERB	35	100.00	2.3584	1.204	0.241	0.102	0.44	5.00
Herb Species Richness per Plot	HERBRP	35	100.00	7.5800	1.335	0.265	0.035	4.00	10.00
Total Graminoid Cover per Plot	GRAM	35	100.00	0.2386	0.251	0.056	0.235	0.01	1.01
Graminoid Species Richness per Plot	GRAMRP	35	100.00	2.4000	0.686	0.173	0.072	1.00	4.00
Total Pteridophyte Cover per Plot	PTER	35	34.00	0.0884	0.238	0.047	0.532	0.0	1.00
Pteridophyte Species Richness per Plot	PTERRP	35	34.00	0.3400	0.436	0.087	0.383	0.0	1.00
Total Vascular Cover per Plot	TOT	35	100.00	33.3480	10.518	2.104	0.063	17.37	54.00
Species Richness per Plot	TOTRP	35	100.00	17.1800	1.930	0.388	0.022	14.00	22.00

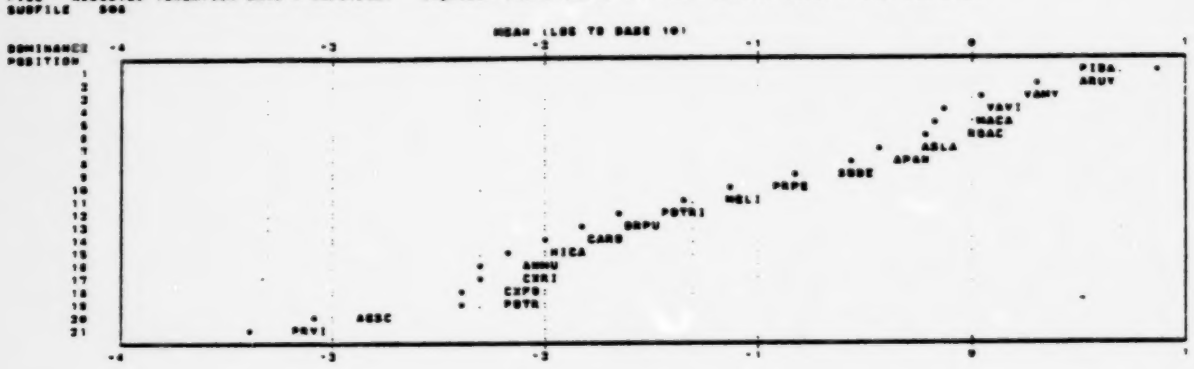
Athabasca Oil Sands Geological Monitoring: August 1982 Surveys 04/07/83 PAGE 44
Descriptive Statistics for Each Species Variable and Each Stand
FILE A8582725 (CREATION DATE = 04/07/83) Eighteen Stand Tables of 1982 Vascular Cover % Data (5m x 5m)
SUBFILE 888

LABEL	VARIABLE	N	PRES %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Pinus banksiana	PIBA	25	100.00	7.8400	5.883	1.139	0.149	1.00	20.00
Picea glauca	PIGL	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Picea mariana	PIMA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Populus tremuloides	POTR	25	4.00	0.0040	0.020	0.004	1.000	+0.0	0.10
Populus balsamifera	POBA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Betula papyrifera	BEPA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Larix laricina	LALA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Vaccinium myrtilloides	VAMY	25	88.00	1.0520	0.975	0.195	0.185	+0.0	3.00
Vaccinium vitis-idaea	VAVI	25	88.00	0.7280	0.612	0.122	0.168	+0.0	2.00
Arctostaphylos uva-ursi	ARUV	25	100.00	2.0800	1.325	0.265	0.128	0.50	4.00
Rosa acicularis	ROAC	25	48.00	0.8040	1.067	0.213	0.263	+0.0	5.00
Prunus pensylvanica	PRPE	25	20.00	0.0720	0.219	0.044	0.606	+0.0	1.00
Amelanchier alnifolia	AMAL	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Rubus strigosus	RUST	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Lonicera dioica	LODI	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Viburnum edule	VIED	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Hudsonia tomentosa	HUTO	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Salix bebbiana	SABE	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Alnus crispa	ALCR	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Lesum groenlandicum	LEGR	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Salix pseudomonticola	SAPS	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Symphoricarpos albus	SYAL	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Betula pumila	BEPU	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Salix scouleriana	SASC	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Shepherdia canadensis	SHCA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Salix sp	SASP	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Vaccinium oxycoccos	VAOX	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Salix myrtillifolia	SAMY	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Maianthemum canadense	MACA	25	92.00	0.8784	0.897	0.131	0.150	+0.0	3.00
Aster laevis	ASLA	25	92.00	0.3384	0.317	0.063	0.178	+0.0	1.00
Anemone multifida	ANMU	25	12.00	0.0052	0.030	0.006	0.770	+0.0	0.10
Salix boreals	SABO	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Melampyrum lineare	MELI	25	16.00	0.0444	0.139	0.028	0.624	+0.0	0.50
Linnaea borealis	LIBO	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Campanula rotundifolia	CARO	25	84.00	0.0100	0.018	0.004	0.387	+0.0	0.10
Solidago decumbens	SODE	25	92.00	0.1484	0.181	0.032	0.217	+0.0	0.80
Viola adunca	VIAD	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Apocynum androsaemifolium	APAN	25	60.00	0.2760	0.334	0.067	0.241	+0.0	1.00
Comandra pallida	COPA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Fragaria virginiana	FRVI	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Potentilla tridentata	POTR1	25	36.00	0.0216	0.040	0.008	0.372	+0.0	0.10
Geocaulon lividum	GELI	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Pyrola virens	PYVI	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Hieracium canadense	HICA	25	32.00	0.0068	0.020	0.004	0.587	+0.0	0.10
Pyrola secunda	PYSE	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Epilobium angustifolium	EPAN	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Artemisia campestris	ARCA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Aralia nudicaulis	ARNU	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Cornus canadensis	COCA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Lilium philadelphicum	LIPH	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Anemone patens	ANPA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Trientalis borealis	TRBO	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Viola renifolia	VIRE	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Goodyera repens	GORE	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Lathyrus ochroleucus	LAOC	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Vicia americana	VIAM	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Petasites palmatus	PEPA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Aster ciliolatus	ASCI	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Achillea millefolium	ACMI	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Antennaria racemosa	ANRA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Bromus sp	BRSP	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Senecio sp	SESP	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Senecio sp	SESE	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Senecio cymbalarioides	SECY	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Stellaria longipes	STLO	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Ranunculus sp	RACE	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Labiatae sp	MINT	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Geranium bicknellii	GEBI	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Arabis lyallii	ARLY	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Chenopodium sp	CHEN	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Pedicularis labradorica	PELA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Agoseris flavescens	AGFL	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Gentianella amarella	GEAM	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Rubus acaulis	RUAC	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Pyrola asarifolia	PYAS	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Mitella nuda	MINU	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Oryzopsis pungens	ORPU	25	80.00	0.0152	0.026	0.005	0.340	+0.0	0.10
Elymus innovatus	ELIN	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Carex richardsonii	CARI	25	12.00	0.0048	0.020	0.004	0.834	+0.0	0.10
Carex foenea	CAFO	25	40.00	0.0040	0.005	0.001	0.250	+0.0	0.01
Oryzopsis asperifolia	ORAS	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Agrostis scabra	AGSC	25	8.00	0.0004	0.002	0.001	0.832	+0.0	0.01
Bromus ciliatus	BRCI	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Schizachne purpurascens	SCPU	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Juncus balticus	JUBA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Elymus glaucus	ELGL	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Calamagrostis canadensis	CACA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Calamagrostis inexpansa	CAIN	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Festuca saximontana	FESA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Bromus pumpellianus	BRPU	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Carex sp	CASP	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Equisetum variegatum	EQVA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Lycopodium tristachyum	LYTR	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Lycopodium annotinum	LYAN	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Equisetum sylvaticum	EQSY	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Equisetum scirpoides	EQSC	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Selaginella densa	SEDE	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Equisetum pratense	EQPR	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Lycopodium clavatum	LYCL	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Equisetum arvense	EQAR	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Prunus virginiana	PRVI	25	4.00	0.0004	0.002	0.000	1.000	+0.0	0.01
Lonicera villosa	LOVI	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Pedicularis groenlandica	PEGR	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Sambucus nigrum	SANI	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0

BASED ON 21 POSITIVE MEANS SIMPSON'S INDEX OF DOMINANCE CONCENTRATION, C = 0.348
SHANNON-WEAVER INDEX OF DIVERSITY, H' = 1.888 (NATURAL LOGS)

21 OF THE 104 VARIABLES HAVE POSITIVE MEANS, WHICH SUM TO 13.7392

Athabasca Oil Sands Geological Monitoring: August 1982 Surveys 04/07/83 PAGE 46
Descriptive Statistics for Each Species Variable and Each Stand
FILE A0582V2S (CREATION DATE = 04/07/83) Eighteen Stand Tables of 1982 Vascular Cover % Data (5m x 5m)
SUBFILE 306



Athabasca Oil Sands Geological Monitoring August 1982 Surveys 04/07/83 PAGE 71
Descriptive Statistics for Synthetic Variables at Each Stand
FILE A0582V2S (CREATION DATE = 04/07/83) Eighteen Stand Tables of 1982 Vascular Cover % Data (5m x 5m)
SUBFILE 306

LABEL	VARIABLE	N	PRES %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Soil temperature 5-10 cm degrees F	TEMP	25	100.00	58.3200	0.940	0.188	0.002	56.00	60.00
Total Tree Cover per Plot	TREE	25	100.00	7.8440	5.782	1.148	0.148	1.00	20.10
Tree Species Richness per Plot	TREERP	25	100.00	1.0400	0.200	0.040	0.038	1.00	2.00
Total Shrub Cover per Plot	SHRUB	25	100.00	4.5364	3.156	0.632	0.093	1.50	9.00
Shrub Species Richness per Plot	SHRUBRP	25	100.00	3.4800	1.005	0.201	0.058	1.00	5.00
Total Forb Cover per Plot	FORB	25	100.00	1.9480	0.895	0.183	0.100	0.10	3.11
Forb Species Richness per Plot	FORBRP	25	100.00	5.1200	1.313	0.263	0.051	1.00	8.00
Total Graminoid Cover per Plot	GRAM	25	88.00	0.0248	0.033	0.007	0.287	0.0	0.12
Graminoid Species Richness per Plot	GRAMRP	25	88.00	1.4000	0.816	0.163	0.117	0.0	3.00
Total Pteridophyte Cover per Plot	PTER	25	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pteridophyte Species Richness per Plot	PTERRP	25	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Vascular Cover per Plot	TOT	25	100.00	13.7352	6.460	1.292	0.094	4.52	28.14
Species Richness per Plot	TOTRP	25	100.00	11.0000	2.189	0.432	0.039	5.00	14.00

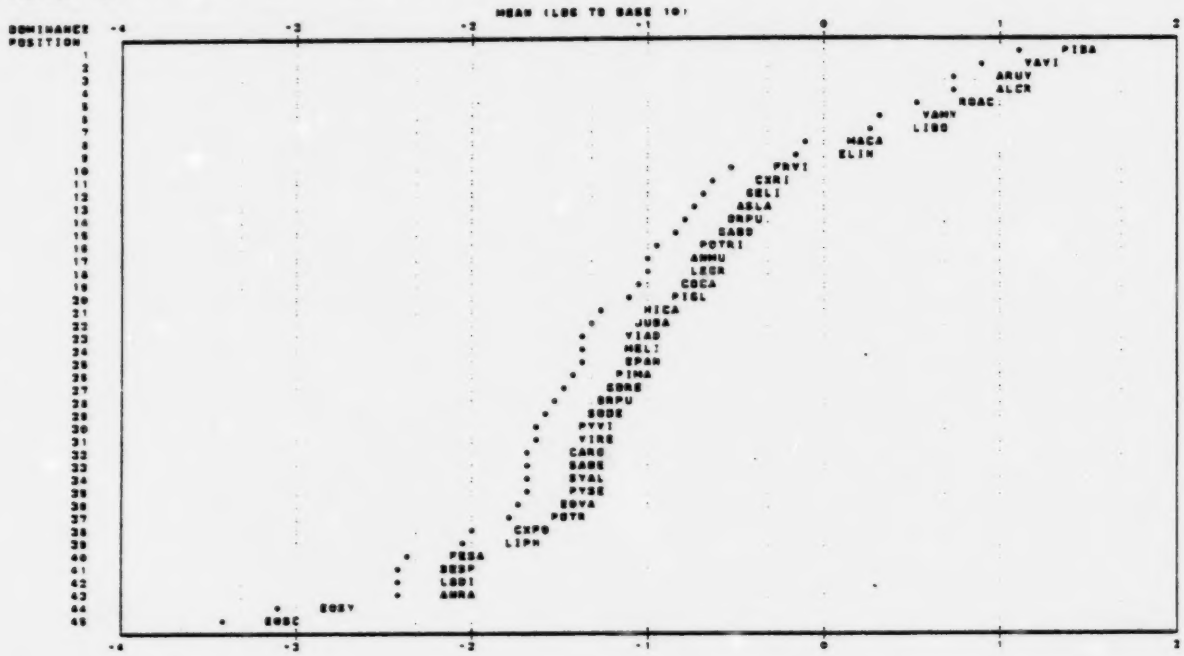
Athabasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/07/83 PAGE 46
Descriptive Statistics for Each Species Variable and Each Stand
FILE A0582V3S (CREATION DATE = 04/07/83) Eighteen Stand Tables of 1982 Vascular Cover % Data (5m x 5m)
SUBFILE SOS

LABEL	VARIABLE	N	FREQ %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Pinus banksiana	PIBA	25	100.00	12.7200	7.317	1.483	0.118	2.00	30.00
Picea glauca	PIGL	25	4.00	0.0800	0.400	0.080	1.000	+0.0	2.00
Picea mariana	PIMA	25	4.00	0.0400	0.200	0.040	1.000	+0.0	1.00
Populus tremuloides	PDTR	25	16.00	0.0180	0.037	0.007	0.458	+0.0	0.10
Populus balsamifera	PBBA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Betula papyrifera	BEPA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Larix laricina	LALA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Vaccinium myrtilloides	VAMY	25	64.00	1.9440	2.304	0.477	0.248	+0.0	10.00
Vaccinium vitis-idaea	VAVI	25	100.00	7.6000	5.305	1.281	0.183	3.00	30.00
Arctostaphylos uva-ursi	ARUV	25	92.00	5.4440	3.857	0.771	0.142	+0.0	18.00
Rosa acicularis	ROAC	25	100.00	3.5800	1.895	0.379	0.106	1.00	10.00
Prunus pensylvanica	PRPE	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Amelanchier alnifolia	AMAL	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Rubus strigosus	RUST	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Lonicera dioica	LODI	25	4.00	0.0040	0.020	0.004	1.000	+0.0	0.10
Viburnum edule	VIED	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Hudsonia tomentosa	HUTO	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Salix bebbiana	SABE	25	4.00	0.0200	0.100	0.020	1.000	+0.0	0.50
Alnus crispa	ALCR	25	32.00	5.2800	11.301	2.260	0.428	+0.0	40.00
Ledum groenlandicum	LEGR	25	8.00	0.1000	0.408	0.082	0.816	+0.0	2.00
Salix pseudomonticola	SAPS	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Symphoricarpos albus	SYAL	25	4.00	0.0200	0.100	0.020	1.000	+0.0	0.50
Betula pumila	BEPU	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Salix scouleriana	SASC	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Shepardia canadensis	SHCA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Salix sp	SASP	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Vaccinium caespitosum	VACA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Salix myrtillifolia	SAMY	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Maianthemum canadense	MACA	25	100.00	0.7840	0.516	0.103	0.132	0.10	2.00
Aster laevis	ASLA	25	88.00	0.1888	0.222	0.044	0.235	+0.0	0.80
Anemone multifida	ANMU	25	84.00	0.1088	0.128	0.025	0.239	+0.0	0.50
Galium boreale	GABO	25	80.00	0.1482	0.184	0.037	0.247	+0.0	0.80
Melampyrum lineare	MELI	25	16.00	0.0408	0.138	0.028	0.678	+0.0	0.50
Linnaea borealis	LIBO	25	76.00	1.8880	2.388	0.478	0.253	+0.0	10.00
Campanula rotundifolia	CARO	25	84.00	0.0208	0.036	0.007	0.342	+0.0	0.10
Solidago decumbens	SODE	25	44.00	0.0280	0.043	0.008	0.328	+0.0	0.10
Viola adunca	VIAD	25	84.00	0.0416	0.048	0.010	0.235	+0.0	0.10
Apocynum androsaemifolium	APAN	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Comandra pallida	COPA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Fragaria virginiana	FRVI	25	76.00	0.3124	0.352	0.072	0.332	+0.0	1.00
Potentilla tridentata	POTRI	25	48.00	0.1088	0.230	0.046	0.424	+0.0	1.00
Geocaulon lividum	GELI	25	36.00	0.2084	0.453	0.091	0.438	+0.0	2.00
Pyrola virens	PYVI	25	8.00	0.0240	0.101	0.020	0.843	+0.0	0.50
Hieracium canadense	HICA	25	52.00	0.0872	0.104	0.021	0.242	+0.0	0.50
Pyrola secunda	PYSE	25	4.00	0.0200	0.100	0.020	1.000	+0.0	0.50
Epilobium angustifolium	EPAN	25	8.00	0.0404	0.200	0.040	0.990	+0.0	1.00
Arnica cordifolia	ARCA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Aralia nudicaulis	ARNU	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Cornus canadensis	COCA	25	20.00	0.0880	0.235	0.047	0.534	+0.0	1.00
Lilium philadelphicum	LIPH	25	16.00	0.0088	0.028	0.006	0.627	+0.0	0.10
Anemone patens	ANPA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Trientalis borealis	TRBO	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Viola renifolia	VIRE	25	8.00	0.0240	0.101	0.020	0.843	+0.0	0.50
Goodyera repens	GORE	25	24.00	0.0232	0.103	0.021	0.814	+0.0	0.50
Lathyrus ochroleucus	LAOC	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Vicia americana	VIAM	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Pedicularis palmata	PEPA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Aster ciliolatus	ASCI	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Achillea millefolium	ACMI	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Antennaria rosea	ANRA	25	4.00	0.0040	0.020	0.004	1.000	+0.0	0.10
Draba sp	DRSP	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Senecio sp	SESP	25	4.00	0.0040	0.020	0.004	1.000	+0.0	0.10
Senecio sp	SESE	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Senecio cymbalarioides	SECY	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Stellaria longipes	STLO	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Ranunculus sp	RACE	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Labiatae sp	MINT	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Boreavium bicknellii	BEBI	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Arabis lyallii	ARLY	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Chenopodium sp.	CHEN	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Pedicularis labradorica	PELA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Aquilegia flavescens	AQFL	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Gentianella amarella	GEAM	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Rubus acaulis	RUAC	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Pyrola asarifolia	PYAS	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Mitella nuda	MINU	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Oryzopsis pungens	ORPU	25	100.00	0.1548	0.160	0.036	0.232	0.01	0.50
Elymus innovatus	ELIN	25	88.00	0.8784	0.732	0.146	0.218	+0.0	3.00
Carex richardsonii	CXRI	25	92.00	0.2360	0.204	0.041	0.173	+0.0	0.80
Carex foenea	CXFO	25	32.00	0.0104	0.027	0.005	0.525	+0.0	0.10
Oryzopsis asperifolia	ORAS	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Agrostis scabra	AGSC	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Bromus ciliatus	BRCI	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Schizachne purpurascens	SCPU	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Juncus balticus	JUBA	25	92.00	0.0488	0.048	0.009	0.190	+0.0	0.10
Elymus glaucus	ELGL	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Calamagrostis canadensis	CACA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Calamagrostis inexpansa	CAIN	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Festuca saximontana	FESA	25	8.00	0.0044	0.020	0.004	0.910	+0.0	0.10
Prunus pumeliianus	PRPU	25	52.00	0.0304	0.044	0.009	0.293	+0.0	0.10
Carex sp	CXSP	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Equisetum variegatum	EQVA	25	80.00	0.0184	0.031	0.006	0.328	+0.0	0.10
Lycopodium tristachyum	LYTR	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Lycopodium annotinum	LYAN	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Equisetum sylvaticum	EQSY	25	4.00	0.0008	0.003	0.001	0.992	+0.0	0.01
Equisetum scirpoides	EQSC	25	4.00	0.0004	0.002	0.000	1.000	+0.0	0.01
Selaginella densa	SEDE	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Equisetum pratense	EQPR	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Lycopodium clavatum	LYCL	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Equisetum arvense	EQAR	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Prunus virginiana	PRVI	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Lonicera villosa	LOVI	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Pedicularis groenlandica	PEGR	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Empetrum nigrum	EMNI	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0

BASED ON 45 POSITIVE MEANS SIMPSON'S INDEX OF DOMINANCE CONCENTRATION, C = 0.152
SHANNON-WEAVER INDEX OF DIVERSITY, H' = 3.144 (NATURAL LOGS)

45 OF THE 104 VARIABLES HAVE POSITIVE MEANS, WHICH SUM TO 42.3612

Athabasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/07/83 PAGE 47
Descriptive Statistics for Each Species Variable and Each Stand
FILE A0582V2S (CREATION DATE = 04/07/83) Eighteen Stand Tables of 1982 Vascular Cover % Data (5m x 5m)
SUBFILE S09



Athabasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/07/83 PAGE 72
Descriptive Statistics for Synthetic Variables at Each Stand
FILE A0582V2S (CREATION DATE = 04/07/83) Eighteen Stand Tables of 1982 Vascular Cover % Data (5m x 5m)
SUBFILE S09

LABEL	VARIABLE	N	FREQ %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Soil temperature 5-10 cm degrees F	TEMP	25	100.00	58.8000	1.155	0.231	0.004	53.00	57.00
Total Tree Cover per Plot	TREE	25	100.00	13.4560	7.313	1.484	0.114	2.00	30.10
Tree Species Richness per Plot	TREERP	25	100.00	1.2400	0.436	0.087	0.070	1.00	2.00
Total Shrub Cover per Plot	SHRUB	25	100.00	25.0840	9.836	1.967	0.078	10.20	52.00
Shrub Species Richness per Plot	SHRUBRP	25	100.00	5.0400	0.935	0.187	0.037	4.00	7.00
Total Forb Cover per Plot	FORB	25	100.00	2.2900	1.214	0.243	0.106	0.53	5.31
Forb Species Richness per Plot	FORBRP	25	100.00	8.2400	2.346	0.469	0.054	4.00	12.00
Total Graminoid Cover per Plot	GRAM	25	100.00	1.1812	0.695	0.139	0.120	0.33	3.21
Graminoid Species Richness per Plot	GRAMRP	25	100.00	4.6400	1.075	0.215	0.049	2.00	7.00
Total Pteridophyte Cover per Plot	PTER	25	88.00	0.0200	0.030	0.006	0.304	0.0	0.10
Pteridophyte Species Richness per Plot	PTERRP	25	88.00	0.0200	0.000	0.000	0.000	0.0	0.00
Total Vascular Cover per Plot	TOT	25	100.00	42.3812	13.870	3.798	0.088	18.17	76.54
Species Richness per Plot	TOTRP	25	100.00	20.1200	3.056	0.611	0.031	14.00	33.00

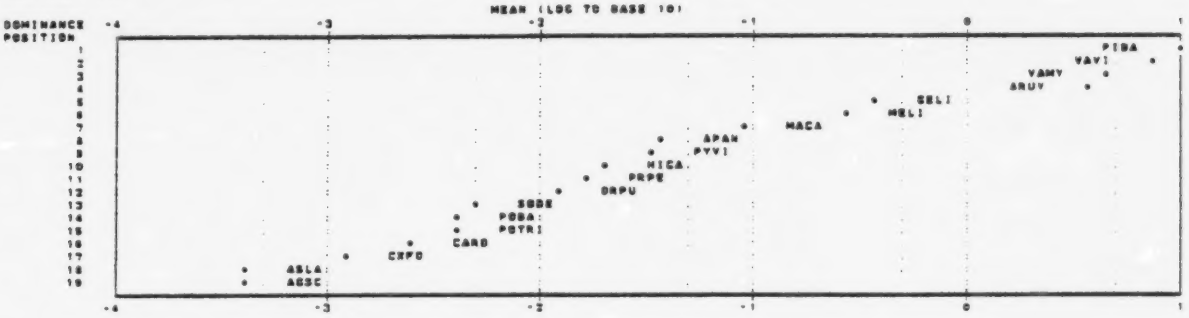
Athabasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/07/83 PAGE 44
Descriptive Statistics for Each Species Variable and Each Stand
FILE ADS82V3S (CREATION DATE = 04/07/83) Eighteen Stand Tables of 1982 Vascular Cover % Data (5m x 5m)
SUBFILE S10

LABEL	VARIABLE	N	FREQ %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Pinus banksiana	PIBA	25	100.00	8.5200	8.316	1.263	0.127	0.50	30.00
Picea glauca	PIGL	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Picea mariana	PIMA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Populus tremuloides	POTR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Populus balsamifera	POBA	25	4.00	0.0040	0.020	0.004	1.000	-0.0	0.10
Betula papyrifera	BEPA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Larix laricina	LALA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Vaccinium myrtilloides	VAMY	25	100.00	4.2920	4.743	0.948	0.221	0.10	20.00
Vaccinium vitis-idaea	VAVI	25	88.00	7.1400	8.235	1.647	0.147	-0.0	20.00
Arctostaphylos uva-ursi	ARUV	25	88.00	3.7800	3.903	0.781	0.201	-0.0	13.00
Rosa acicularis	ROAC	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Prunus pensylvanica	PRPE	25	20.00	0.0184	0.037	0.007	0.405	-0.0	0.10
Amelanchier alnifolia	AMAL	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Rubus strigosus	RUST	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lonicera dioica	LODI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Viburnum edule	VIED	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Hudsonia tomentosa	HUTO	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Salix bebbiana	SABE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Alnus crispa	ALCR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lagum groenlandicum	LEGR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Salix pseudomonticola	SAPS	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Symphoricarpos albus	SYAL	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Betula pumila	BEPU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Salix scouleriana	SASC	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Shepardia canadensis	SHCA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Salix sp.	SASP	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Vaccinium caespitosum	VACA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Salix myrtillifolia	SAMY	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Maianthemum canadense	MACA	25	28.00	0.0824	0.234	0.047	0.567	-0.0	1.00
Aster laevis	ASLA	25	4.00	0.0004	0.002	0.000	1.000	-0.0	0.01
Anemone multifida	ANMU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Galium boreale	GABO	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Melampyrum lineare	MELI	25	88.00	0.2852	0.488	0.094	0.348	-0.0	2.00
Linnaea borealis	LIBO	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Campanula rotundifolia	CARO	25	24.00	0.0024	0.004	0.001	0.383	-0.0	0.01
Solidago decumbens	SODE	25	12.00	0.0048	0.020	0.004	0.834	-0.0	0.10
Viola adunca	VIAD	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Apocynum androsaemifolium	APAN	25	28.00	0.0364	0.103	0.021	0.582	-0.0	0.50
Cornus canadensis	COCA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Fragaria virginiana	FRVI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Potentilla tridentata	POTRI	25	4.00	0.0040	0.020	0.004	1.000	-0.0	0.10
Geocaulon lividum	GELI	25	32.00	0.3848	0.894	0.179	0.490	-0.0	3.00
Pyrola virens	PYVI	25	24.00	0.0328	0.103	0.021	0.625	-0.0	0.50
Hieracium canadense	HICA	25	12.00	0.0208	0.100	0.020	0.980	-0.0	0.50
Pyrola secunda	PYSE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Epilobium angustifolium	EPAN	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Artemisia campestris	ARCA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Aralia nudicaulis	ARNU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cornus canadensis	COCA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lilium philadelphicum	LIPH	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Anemone patens	ANPA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Trientalis borealis	TRBO	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Viola renifolia	VIRE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Goodyera repens	GORE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lathyrus ochroleucus	LAOC	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Vicia americana	VIAM	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Petasites palmatus	PEPA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Aster ciliolatus	ASCI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Achillea millefolium	ACMI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Antennaria racemosa	ANRA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Draba sp	DRSP	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Senecio sp	SESP	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Senecio sp	SESE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Senecio cymbalarioides	SECY	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Stellaria longipes	STLO	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Ranunculus sp	RACE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Labiatae sp	MINT	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Geranium bicknellii	GEBI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Arabis lyallii	ARLY	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Chenopodium sp	CHEN	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Pedicularis labradorica	PELA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Aquilegia flavescens	AQFL	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Gentianella amarella	GEAM	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Rubus acaulis	RUAC	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Pyrola asarifolia	PYAS	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Mitella nuda	MINU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Oryzopsis pungens	ORPU	25	48.00	0.0120	0.027	0.005	0.449	-0.0	0.10
Elymus innovatus	ELIN	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Carex richardsonii	CXRI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Carex foenea	CXFO	25	12.00	0.0012	0.003	0.001	0.853	-0.0	0.01
Oryzopsis asperifolia	ORAS	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Agrostis scabra	AGSC	25	4.00	0.0004	0.002	0.000	1.000	-0.0	0.01
Bromus ciliatus	BRCI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Schizachne purpurascens	SCPU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Juncus balticus	JUBA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Elymus glaucus	ELGL	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Calamagrostis canadensis	CACA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Calamagrostis inexpansa	CAIN	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Festuca saximontana	FESA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Bromus pumellianus	BRPU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Carex sp.	CXSP	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equisetum variegatum	EQVA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lycopodium tristachyum	LYTR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lycopodium annotinum	LYAN	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equisetum sylvaticum	EQSY	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equisetum scirpoides	EQSC	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Selaginella densa	SEDE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equisetum pratense	EQPR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lycopodium clavatum	LYCL	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equisetum arvense	EQAR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Prunus virginiana	PRVI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lonicera villosa	LOVI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Pedicularis groenlandica	PEGR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Empetrum nigrum	EMNI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0

BASED ON 19 POSITIVE MEANS SIMPSON'S INDEX OF DOMINANCE CONCENTRATION, C = 0.270
SHANNON-WEAVER INDEX OF DIVERSITY, H' = 1.485 (NATURAL LOGS)

19 OF THE 104 VARIABLES HAVE POSITIVE MEANS, WHICH SUM TO 35.9844

Athabasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/07/83 PAGE 49
Descriptive Statistics for Each Species Variable and Each Stand
FILE AOS82Y2S (CREATION DATE = 04/07/83) Eighteen Stand Tables of 1982 Vascular Cover % Data (5m x 5m)
SUBFILE S10



Athabasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/07/83 PAGE 73
Descriptive Statistics for Synthetic Variables at Each Stand
FILE AOS82Y2S (CREATION DATE = 04/07/83) Eighteen Stand Tables of 1982 Vascular Cover % Data (5m x 5m)
SUBFILE S10

LABEL	VARIABLE	N	FREQ %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Soil temperature 5-10 cm degrees F	TEMP	25	100.00	58.0880	0.572	0.114	0.002	58.00	58.00
Total Tree Cover per Plot	TREE	25	100.00	9.8240	6.318	1.263	0.127	0.80	26.00
Tree Species Richness per Plot	TREERP	25	100.00	1.0400	0.200	0.040	0.038	1.00	2.00
Total Shrub Cover per Plot	SHRUB	25	100.00	15.2264	4.259	1.852	0.196	3.50	33.00
Shrub Species Richness per Plot	SHRUBRP	25	100.00	3.1200	0.525	0.105	0.034	2.00	4.00
Total Forb Cover per Plot	FORB	25	92.00	0.6284	1.081	0.212	0.288	0.0	3.50
Forb Species Richness per Plot	FORBRP	25	92.00	2.3600	1.912	0.382	0.182	0.0	7.00
Total Graminoid Cover per Plot	GRAM	25	60.00	0.0128	0.028	0.006	0.411	0.0	0.11
Graminoid Species Richness per Plot	GRAMRP	25	96.00	0.8400	0.589	0.114	0.178	0.0	3.00
Total Pteridophyte Cover per Plot	PTER	25	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pteridophyte Species Richness per Plot	PTERRP	25	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Vascular Cover per Plot	TOT	25	100.00	25.9544	6.001	1.200	0.062	13.03	43.32
Species Richness per Plot	TOTRP	25	100.00	7.1800	2.551	0.512	0.072	4.00	13.00

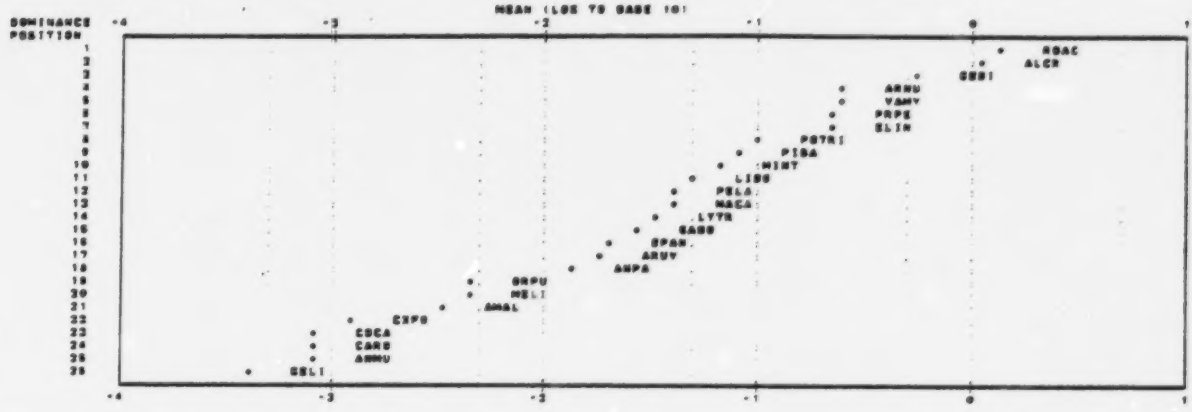
Athabasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/07/83 PAGE 50
Descriptive Statistics for Each Species Variable and Each Stand
FILE ADS82V25 (CREATION DATE = 04/07/83) Eighteen Stand Tables of 1982 Vascular Cover % Data (5m x 5m)
SUBFILE S118

LABEL	VARIABLE	N	FREQ %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Pinus banksiana	PIBA	25	100.00	0.0852	0.132	0.026	0.310	0.01	0.50
Picea glauca	PIGL	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Picea mariana	PIMA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Populus tremuloides	POTR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Populus balsamifera	POBA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Betula papyrifera	BEPA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Larix laricina	LALA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Vaccinium myrtilloides	VAMY	25	64.00	0.2540	0.419	0.084	0.330	-0.0	2.00
Vaccinium vitis-idaea	VAVI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Arctostaphylos uva-ursi	ARUV	25	32.00	0.0176	0.037	0.007	0.419	-0.0	0.10
Rosa acicularis	ROAC	25	80.00	1.3240	1.193	0.239	0.180	-0.0	4.00
Prunus pensylvanica	PRPE	25	44.00	0.2252	0.361	0.072	0.320	-0.0	1.00
Amelanchier alnifolia	AMAL	25	32.00	0.0032	0.005	0.001	0.256	-0.0	0.01
Rubus strigosus	RUST	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lonicera dioica	LODI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Viburnum edule	VIED	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Hudsonia tomentosa	HUTO	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Salix bebbiana	SABE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Alnus crispa	ALCR	25	52.00	1.0800	1.261	0.252	0.238	-0.0	4.00
Ledum groenlandicum	LEGR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Salix pseudomonticola	SAPS	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Symphoricarpos albus	SYAL	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Betula pumila	BEPU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Salix scouleriana	SASC	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Shepardia canadensis	SHCA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Salix sp.	SASP	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Vaccinium caespitosum	VACA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Salix myrtillifolia	SAMY	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Maianthemum canadense	MACA	25	8.00	0.0404	0.200	0.040	0.990	-0.0	1.00
Aster laevis	ASLA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Anemone multifida	ANMU	25	8.00	0.0008	0.003	0.001	0.682	-0.0	0.01
Galium boreale	GABO	25	84.00	0.0280	0.042	0.008	0.297	-0.0	0.10
Melampyrum lineare	MELI	25	8.00	0.0044	0.020	0.004	0.910	-0.0	0.10
Linnaea borealis	LIBO	25	68.00	0.0480	0.103	0.021	0.428	-0.0	0.50
Campanula rotundifolia	CARO	25	8.00	0.0008	0.003	0.001	0.682	-0.0	0.01
Solidago decumbens	SODE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Viola adunca	VIAD	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Apocynum androsaemifolium	APAN	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Comandra pallida	COPA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Fragaria virginiana	FRVI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Potentilla tridentata	POTRI	25	72.00	0.0884	0.158	0.032	0.321	-0.0	0.50
Geocaulon lividum	GELI	25	4.00	0.0004	0.002	0.000	1.000	-0.0	0.01
Pyrola virens	PYVI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Hieracium canadense	HICA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Pyrola secunda	PYSE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Epilobium angustifolium	EPAN	25	12.00	0.0208	0.100	0.020	0.980	-0.0	0.50
Artemisia campestris	ARCA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Aralia nudicaulis	ARNU	25	64.00	0.2572	0.302	0.060	0.235	-0.0	1.00
Cornus canadensis	COCA	25	8.00	0.0004	0.002	0.001	0.682	-0.0	0.01
Lilium philadelphicum	LIPH	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Anemone patens	ANPA	25	32.00	0.0140	0.033	0.007	0.487	-0.0	0.10
Trientalis borealis	TRBO	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Viola renifolia	VIRE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Goodyera repens	GORE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lathyrus ochroleucus	LAOC	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Vicia americana	VIAM	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Potasites palmatus	PEPA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Aster ciliolatus	ASCI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Achillea millefolium	ACMI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Antennaria racemosa	ANRA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Draba sp.	DRSP	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Senecio sp.	SESP	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Senecio sp.	SESE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Senecio cymbalarioides	SECY	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Stellaria longipes	STLO	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Ranunculus sp.	RACE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Labiatae sp.	MINT	25	52.00	0.0884	0.137	0.027	0.283	-0.0	0.50
Geranium bicknellii	GEBI	25	92.00	0.5652	0.782	0.140	0.248	-0.0	3.00
Arabis lyallii	ARLY	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Chenopodium sp.	CHEN	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Pedicularis labradorica	PELA	25	64.00	0.0420	0.183	0.037	0.492	-0.0	0.50
Aquilegia flavescens	AQFL	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Gentianella amarella	GEAM	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Rubus acaulis	RUAC	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Pyrola asarifolia	PYAS	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Mitella nuda	MINU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Oryzopsis pungens	ORPU	25	44.00	0.0044	0.005	0.001	0.230	-0.0	0.01
Elymus innovatus	ELIN	25	88.00	0.2248	0.214	0.043	0.180	-0.0	0.50
Carex richardsonii	CARI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Carex foenea	CAFO	25	12.00	0.0012	0.003	0.001	0.553	-0.0	0.01
Oryzopsis asperifolia	ORAS	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Agrostis scabra	AGSC	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Bromus ciliatus	BRCI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Schizachne purpurascens	SCPU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Juncus balticus	JUBA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Elymus glaucus	ELGL	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Calamagrostis canadensis	CACA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Calamagrostis inexpansa	CAIN	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Festuca saximontana	FESA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Bromus pumpellianus	BRPU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Carex sp.	CXSP	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equisetum variegatum	EQVA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lycopodium tristachyum	LYTR	25	52.00	0.0340	0.046	0.008	0.273	-0.0	0.10
Lycopodium annotinum	LYAN	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equisetum sylvaticum	EQSY	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equisetum scirpoides	EQSC	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Selaginella densa	SEDE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equisetum pratense	EQPR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lycopodium clavatum	LYCL	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equisetum arvense	EQAR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Prunus virginiana	PRVI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lonicera villosa	LOVI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Pedicularis groenlandica	PEGR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Empetrum nigrum	EMNI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0

BASED ON 26 POSITIVE MEANS SIMPSON'S INDEX OF DOMINANCE CONCENTRATION, C = 0.177
SHANNON-WEAVER INDEX OF DIVERSITY, H' = 2.132 (NATURAL LOGS)

26 OF THE 104 VARIABLES HAVE POSITIVE MEANS, WHICH SUM TO 4.4244

Athabasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/07/83 PAGE 51
Descriptive Statistics for Each Species Variable and Each Stand
FILE A0582Y25 (CREATION DATE = 04/07/83) Eighteen Stand Tables of 1982 Vascular Cover % Data (5m x 5m)
SUBFILE $118



Athabasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/07/83 PAGE 74
Descriptive Statistics for Synthetic Variables at Each Stand
FILE A0582Y25 (CREATION DATE = 04/07/83) Eighteen Stand Tables of 1982 Vascular Cover % Data (5m x 5m)
SUBFILE $118

LABEL	VARIABLE	N	FREQ %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Soil temperature 5-10 cm degrees F	TEMP	0	0.0	0.0	LESS THAN 3 CASES, MEANS NO STATISTICS				
Total Tree Cover per Plot	TREE	25	100.00	0.0852	0.132	0.026	0.310	0.01	0.50
Tree Species Richness per Plot	TRERP	25	100.00	1.0000	0.0	0.0	0.0	1.00	1.00
Total Shrub Cover per Plot	SHRUB	25	100.00	2.8320	1.057	0.377	0.130	0.12	5.10
Shrub Species Richness per Plot	SHRUBRP	25	100.00	3.0200	1.115	0.233	0.057	3.00	7.00
Total Forb Cover per Plot	FORB	25	100.00	1.1628	1.030	0.204	0.178	0.12	4.74
Forb Species Richness per Plot	FORBRP	25	100.00	4.3600	1.130	0.286	0.064	3.00	8.00
Total Graminoid Cover per Plot	GRAM	25	96.00	0.2304	0.314	0.063	0.135	0.0	0.81
Graminoid Species Richness per Plot	GRAMRP	25	96.00	1.4400	0.712	0.142	0.099	0.0	3.00
Total Pteridophyte Cover per Plot	PTER	25	52.00	0.0240	0.048	0.009	0.373	0.0	0.10
Pteridophyte Species Richness per Plot	PTERRP	25	52.00	0.5200	0.510	0.102	0.196	0.0	1.00
Total Vascular Cover per Plot	TOT	25	100.00	4.4344	2.494	0.499	0.113	0.36	9.33
Species Richness per Plot	TOTRP	25	100.00	11.8400	2.115	0.422	0.038	7.00	15.00

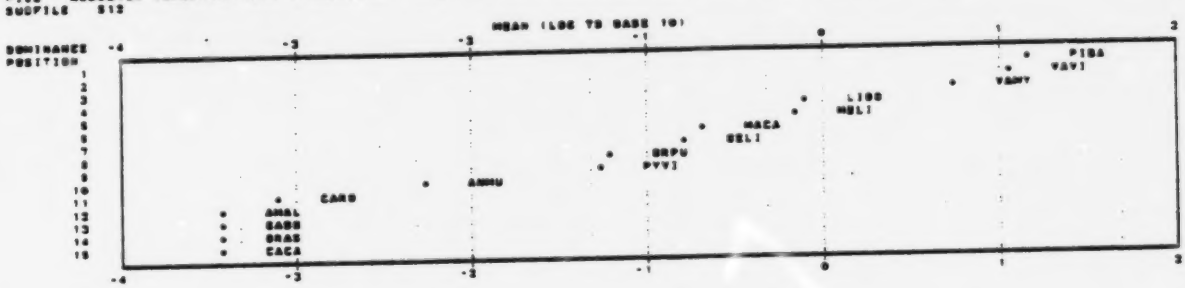
Athabasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/07/83 PAGE 52
Descriptive Statistics for Each Species Variable and Each Stand
FILE ABSB2V3S (CREATION DATE = 04/07/83) Eighteen Stand Tables of 1982 Vascular Cover % Data (5m x 5m)
SUBFILE 512

LABEL	VARIABLE	N	FREQ %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Pinus banksiana	PIBA	25	100.00	14.5800	5.083	1.213	0.083	4.00	35.00
Picea glauca	PIGL	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Picea mariana	PIMA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Populus tremuloides	POTR	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Populus balsamifera	POBA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Betula papyrifera	BEPA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Larix laricina	LALA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Vaccinium myrtilloides	VAMY	25	88.00	5.4800	5.101	1.020	0.187	+0.0	20.00
Vaccinium vitis-idaea	VAVI	25	100.00	11.8840	9.273	1.875	0.156	0.10	35.80
Arctostaphylos uva-ursi	ARUV	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Rosa acicularis	ROAC	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Prunus pensylvanica	PRPE	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Amelanchier alnifolia	AMAL	25	4.00	0.0004	0.002	0.000	1.000	+0.0	0.01
Rubus strigosus	RUST	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Lonicera dioica	LODI	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Viburnum edule	VIED	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Hudsonia tomentosa	HUTO	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Salix bebbiana	SABE	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Alnus crispa	ALCR	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Ledum groenlandicum	LEGR	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Salix pseudomonticola	SAPS	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Symphoricarpos albus	SYAL	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Betula pumila	BEPU	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Salix scouleriana	SASC	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Shepherdia canadensis	SHCA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Salix sp	SASP	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Vaccinium caespitosum	VACA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Salix myrtilloides	SAMY	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Maianthemum canadense	MACA	25	84.00	0.1944	0.261	0.052	0.268	+0.0	1.00
Aster laevis	ASLA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Anemone multifida	ANMU	25	20.00	0.0056	0.020	0.004	0.715	+0.0	0.10
Galium boreale	GABO	25	4.00	0.0004	0.002	0.000	1.000	+0.0	0.01
Melampyrum lineare	MELI	25	88.00	0.6584	0.869	0.134	0.204	+0.0	3.00
Linnaea borealis	LIBO	25	56.00	0.7480	1.038	0.207	0.277	+0.0	3.00
Campanula rotundifolia	CARO	25	4.00	0.0004	0.002	0.001	0.882	+0.0	0.01
Solidago decumbens	SODE	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Viola adunca	VIAD	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Apocynum androsaemifolium	APAN	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Comandra pallida	COPA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Fragaria virginiana	FRVI	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Potentilla tridentata	POTRI	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Goodyera repens	GORE	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Lathyrus ochroleucus	LAOC	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Viola americana	VIAM	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Petasites palmatus	PEPA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Aster ciliolatus	ASCI	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Achillea millefolium	ACMI	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Antennaria racemosa	ANRA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Draba sp	DRSP	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Senecio sp	SESP	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Senecio sp	SESE	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Senecio cymbalarioides	SECY	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Stellaria longipes	STLO	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Ranunculus sp	RACE	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Labiatae sp	MINT	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Geranium bicknellii	GEBI	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Arabis lyallii	ARLY	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Chenopodium sp	CHEN	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Pedicularis labradorica	PELA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Agulegia flavescens	AQFL	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Gentianella amarella	GEAM	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Rubus acaulis	RUAC	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Pyrola asarifolia	PYAS	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Mitella nuda	MINU	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Grysopsis pungens	GRPU	25	84.00	0.0844	0.102	0.020	0.315	+0.0	0.50
Elymus innovatus	ELIN	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Carex richardsonii	CARI	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Carex foenea	CAFO	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Grysopsis asperifolia	GRAS	25	4.00	0.0004	0.002	0.000	1.000	+0.0	0.01
Agrostis scabra	AGSC	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Bromus ciliatus	BRCI	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Semiscarma purpurascens	SEPU	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Juncus balticus	JUBA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Elymus glaucus	ELGL	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Calamagrostis canadensis	CACA	25	4.00	0.0004	0.002	0.000	1.000	+0.0	0.01
Calamagrostis inexpansa	CAIN	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Festuca saximontana	FESA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Bromus pumellianus	BRPU	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Carex sp	CASP	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Equisetum variegatum	EQVA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Lycopodium tristachyum	LYTR	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Lycopodium annotinum	LYAN	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Equisetum sylvaticum	EQSY	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Equisetum scirpoides	EQSC	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Selaginella sanguinolenta	SESE	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Equisetum pratense	EQPR	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Lycopodium clavatum	LYCL	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Equisetum arvense	EQAR	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Prunus virginiana	PRVI	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Lonicera villosa	LOVI	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Pedicularis groenlandica	PEGR	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Smilacina nigrum	SMNI	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0

BASED ON 15 POSITIVE MEANS SIMPSON'S INDEX OF DOMINANCE CONCENTRATION, C = 0.336
SHANNON-WEAVER INDEX OF DIVERSITY, H' = 1.385 (NATURAL LOGS)

15 OF THE 184 VARIABLES HAVE POSITIVE MEANS, WHICH SUM TO 33.7880

Athabasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/07/83 PAGE 53
Descriptive Statistics for Each Species Variable and Each Stand
FILE ABS82V2S (CREATION DATE = 04/07/83) Eighteen Stand Tables of 1982 Vascular Cover % Data (5m x 5m)
SUBFILE S12



Athabasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/07/83 PAGE 75
Descriptive Statistics for Synthetic Variables at Each Stand
FILE ABS82V2S (CREATION DATE = 04/07/83) Eighteen Stand Tables of 1982 Vascular Cover % Data (5m x 5m)
SUBFILE S12

LABEL	VARIABLE	N	PRES %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Soil temperature 5-10 cm degrees F	TEMP	25	100.00	55.3200	0.478	0.095	0.002	55.00	57.00
Total Tree Cover per Plot	TREE	25	100.00	14.5000	5.063	1.313	0.093	4.00	25.00
Tree Species Richness per Plot	TREERP	25	100.00	1.0000	0.0	0.0	0.0	1.00	1.00
Total Shrub Cover per Plot	SHRUB	25	100.00	15.0824	13.460	2.693	0.168	0.10	55.10
Shrub Species Richness per Plot	SHRUBRP	25	100.00	3.5600	0.651	0.130	0.051	1.00	4.00
Total Forb Cover per Plot	FORB	25	100.00	1.0704	0.733	0.146	0.137	0.11	3.00
Forb Species Richness per Plot	FORBRP	25	100.00	2.5600	0.803	0.160	0.050	1.00	4.00
Total Graminoid Cover per Plot	GRAM	25	88.00	0.8852	0.183	0.021	0.317	0.0	0.51
Graminoid Species Richness per Plot	GRAMRP	25	88.00	0.8800	0.485	0.097	0.055	0.0	2.00
Total Pteridophyte Cover per Plot	PTER	25	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pteridophyte Species Richness per Plot	PTERRP	25	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Vascular Cover per Plot	TOT	25	100.00	33.7520	14.433	2.885	0.085	15.30	73.10
Species Richness per Plot	TOTRP	25	100.00	7.2000	1.384	0.277	0.038	4.00	10.00

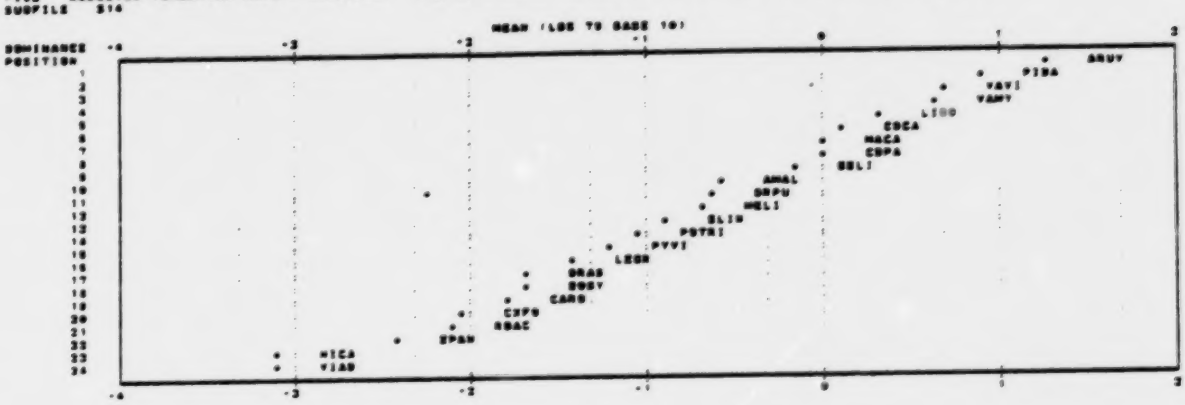
Athabasca Oil Sands Geological Monitoring: August 1982 Surveys 04/07/83 PAGE 84
Descriptive Statistics for Each Species Variable and Each Stand
FILE A8582V2S (CREATION DATE = 04/07/83) Eighteen Stand Tables of 1982 Vascular Cover % Data (5m x 5m)
SUBFILE 814

LABEL	VARIABLE	N	FREQ %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Pinus banksiana	PIBA	25	100.00	5.0004	5.838	1.167	0.145	0.01	20.00
Picea glauca	PIGL	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Picea mariana	PIMA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Populus tremuloides	POTR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Populus balsamifera	POBA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Betula papyrifera	BEPA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Larix laricina	LALA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Vaccinium myrtilloides	VAMY	25	100.00	4.4200	3.061	0.618	0.139	0.50	13.00
Vaccinium vitis-idaea	VAVI	25	56.00	4.7300	3.535	0.727	0.154	-0.0	13.00
Arctostaphylos uva-ursi	ARUV	25	100.00	17.7500	8.043	1.209	0.068	3.00	35.00
Rosa acicularis	ROAC	25	8.00	0.0080	0.028	0.006	0.882	-0.0	0.10
Prunus pensylvanica	PRPE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Amelanchier alnifolia	AMAL	25	76.00	0.2884	0.303	0.061	0.236	-0.0	1.00
Rubus strigosus	RUST	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lonicera dioica	LODI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Viburnum edule	VIED	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Hudsonia tomentosa	HUTO	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Salix bebbiana	SABE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Alnus crispa	ALCR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Ledum groenlandicum	LEGR	25	4.00	0.0400	0.200	0.040	1.000	-0.0	1.00
Salix pseudomonticola	SAPS	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Symphoricarpos albus	SYAL	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Betula pumila	BEPU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Salix seculeriana	SASC	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Shepherdia canadensis	SHCA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Salix sp.	SASP	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Vaccinium caespitosum	VACA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Salix myrtillifolia	SAMY	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Maianthemum canadense	MACA	25	96.00	1.0130	0.782	0.152	0.151	-0.0	3.00
Aster laevis	ASLA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Anemone multifida	ANMU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Salix barrelia	SABB	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Melampyrum lineare	MELI	25	76.00	0.2884	0.291	0.058	0.279	-0.0	1.00
Linnaea borealis	LIBO	25	96.00	2.1800	1.172	0.234	0.107	-0.0	4.00
Campanula rotundifolia	CARO	25	96.00	0.0184	0.032	0.006	0.365	-0.0	0.10
Solidago decumbens	SODE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Viola adunca	VIAD	25	4.00	0.0004	0.002	0.001	0.882	-0.0	0.01
Apocynum androsaemifolium	APAN	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Comandra pallida	COPA	25	84.00	0.0840	0.094	0.139	0.141	-0.0	0.20
Fragaria virginiana	FRVI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Potentilla tridentata	POTR1	25	72.00	0.0688	0.133	0.026	0.395	-0.0	0.50
Goodyera tesselata	GOTE	25	88.00	0.7000	0.622	0.124	0.178	-0.0	2.00
Pyrola virens	PYVI	25	48.00	0.0884	0.184	0.037	0.344	-0.0	0.50
Hieracium canadense	HICA	25	4.00	0.0004	0.002	0.001	0.882	-0.0	0.01
Pyrola secunda	PYSE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Epilobium angustifolium	EPAN	25	4.00	0.0040	0.020	0.004	1.000	-0.0	0.10
Artemisia campestris	ARCA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Aralia nudicaulis	ARNU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cornus canadensis	COCA	25	100.00	1.3580	1.234	0.247	0.195	0.10	5.00
Lilium philadelphicum	LIPH	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Anemone patens	ANPA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Trientalis borealis	TRBO	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Viola renifolia	VIRE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Goodyera repens	GORE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lathyrus ochroleucus	LAOC	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Vicia americana	VIAM	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Petasites palmatus	PEPA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Aster ciliolatus	ASCI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Achillea millefolium	ACMI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Antennaria racemosa	ANRA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Draba sp.	DRSP	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Senecio sp.	SESP	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Senecio sp.	SESE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Senecio cymbalarioides	SECY	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Stellaria longipes	STLO	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Ranunculus sp.	RACE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Labiatae sp.	MINT	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Geranium bicknellii	GEBI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Arabis lyallii	ARLY	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Chenopodium sp.	CHEN	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Pedicularis labradorica	PELA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Aquilegia flavescens	AQFL	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Gentianella amarella	GEAM	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Rubus acaulis	RUAC	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Pyrola asarifolia	PYAS	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Mitella nuda	MINU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Oryzopsis pungens	ORPU	25	100.00	0.3388	0.208	0.042	0.182	0.01	0.80
Elymus innovatus	ELIN	25	88.00	0.1212	0.178	0.035	0.288	-0.0	0.50
Carex richardsonii	CARI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Carex foenea	CAFO	25	16.00	0.0088	0.028	0.006	0.627	-0.0	0.10
Oryzopsis asperifolia	ORAS	25	16.00	0.0212	0.100	0.020	0.942	-0.0	0.50
Agrostis scabra	AGSC	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Bromus ciliatus	BRCI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Schizachne purpurascens	SCPU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Juncus balticus	JUBA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Elymus glaucus	ELGL	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Calamagrostis canadensis	CACA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Calamagrostis inexpansa	CAIN	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Festuca saximontana	FESA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Bromus pumpellianus	BRPU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Carex sp.	CASP	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equisetum variegatum	EQVA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lycopodium tristachyum	LYTR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lycopodium annotinum	LYAN	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equisetum sylvaticum	EQSY	25	4.00	0.0304	0.190	0.038	0.588	-0.0	0.50
Equisetum scirpoides	EQSC	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Selaginella sanca	SESE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equisetum pratense	EQPR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lycopodium clavatum	LYCL	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equisetum arvense	EQAR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Prunus virginiana	PRVI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lonicera villosa	LOVI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Pedicularis groenlandica	PEGR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equetrum nigrum	EQNI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0

BASED ON 24 POSITIVE MEANS SIMPSON'S INDEX OF DOMINANCE CONCENTRATION, C = 0.242
SHANNON-WEAVER INDEX OF DIVERSITY, H' = 1.812 (NATURAL LOGS)

24 OF THE 104 VARIABLES HAVE POSITIVE MEANS, WHICH SUM TO 42.1904

Atmospheric Oil Sands Ecological Monitoring: August 1983 Surveys 04/07/83 PAGE 59
Descriptive Statistics for Each Species Variable and Each Stand
FILE A8583Y35 (CREATION DATE = 04/07/83) Eighteen Stand Tables of 1983 Vascular Cover % Data (5m x 5m)
SUBFILE S14



Atmospheric Oil Sands Ecological Monitoring: August 1983 Surveys 04/07/83 PAGE 79
Descriptive Statistics for Synthetic Variables at Each Stand
FILE A8583Y35 (CREATION DATE = 04/07/83) Eighteen Stand Tables of 1983 Vascular Cover % Data (5m x 5m)
SUBFILE S14

LABEL	VARIABLE	N	PRES %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Soil temperature 5-10 cm degrees F	TEMP	35	100.00	59.2000	1.705	0.342	0.009	56.00	61.00
Total Tree Cover per Plot	TREE	35	100.00	6.0000	5.838	1.187	0.148	0.01	30.00
Tree Species Richness per Plot	TREERP	35	100.00	1.0000	0.0	0.0	0.0	1.00	1.00
Total Shrub Cover per Plot	SHRUB	35	100.00	28.2844	8.529	1.304	0.045	12.50	50.00
Shrub Species Richness per Plot	SHRUBRP	35	100.00	4.0000	0.577	0.115	0.024	4.00	5.00
Total Herb Cover per Plot	HERB	35	100.00	4.3044	3.173	0.635	0.199	1.01	9.11
Herb Species Richness per Plot	HERBRP	35	100.00	4.0000	1.323	0.305	0.041	4.00	8.00
Total Graminoid Cover per Plot	GRAM	35	100.00	0.3045	0.347	0.069	0.182	0.01	1.10
Graminoid Species Richness per Plot	GRAMRP	35	100.00	3.0000	0.707	0.141	0.071	1.00	4.00
Total Pteridophyte Cover per Plot	PTER	35	0.00	0.0304	0.180	0.030	0.986	0.0	0.50
Pteridophyte Species Richness per Plot	PTERRP	35	.0	0.0000	0.277	0.055	0.893	0.0	1.00
Total Vascular Cover per Plot	TOT	35	100.00	42.1304	9.395	1.859	0.044	25.71	64.33
Species Richness per Plot	TOTRP	35	100.00	14.2000	1.705	0.354	0.025	11.00	18.00

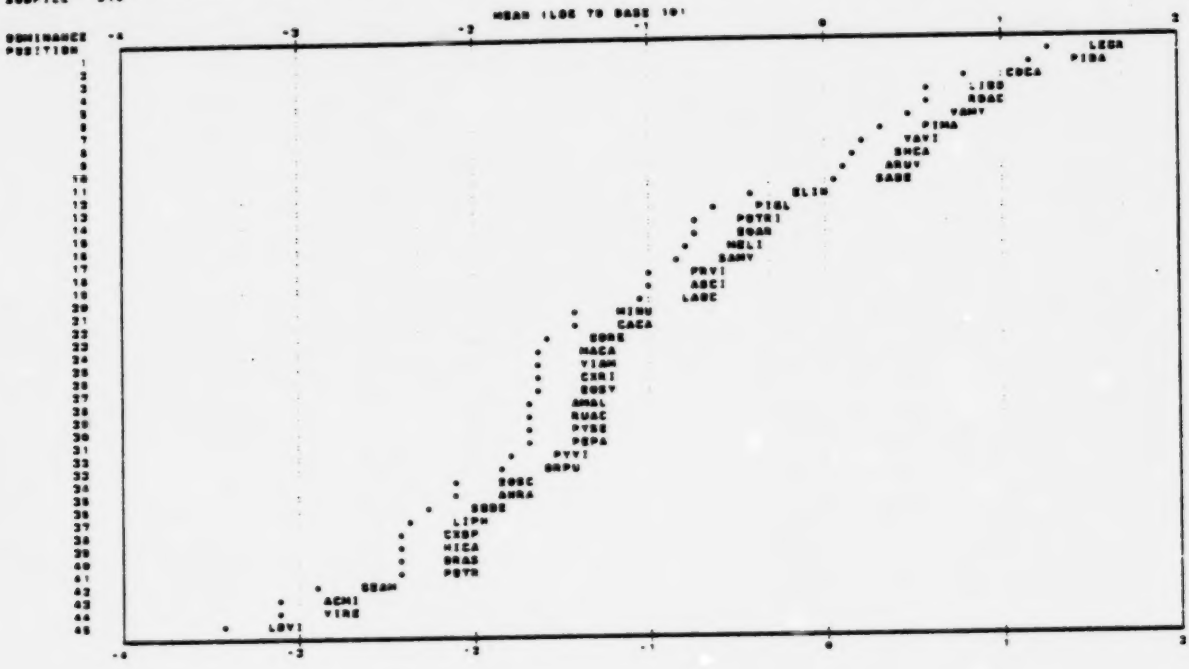
Athabasca Oil Sands Ecological Monitoring: August 1983 Surveys 04/07/83 PAGE 86
Descriptive Statistics for Each Species Variable and Each Stand
FILE A0583Y2S (CREATION DATE = 04/07/83) Eighteen Stand Tables of 1983 Vascular Cover % Data (5m x 5m)
SUBFILE S15

LABEL	VARIABLE	N	PRES %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Pinus banksiana	PIBA	25	100.00	14.8000	7.008	1.401	0.095	3.00	35.00
Picea glauca	PIGL	25	28.00	0.2400	0.580	0.116	0.483	-0.0	2.00
Picea mariana	PIMA	25	72.00	2.1800	2.085	0.417	0.193	-0.0	8.00
Populus tremuloides	POTR	25	4.00	0.0040	0.020	0.004	1.000	-0.0	0.10
Populus balsamifera	POBA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Betula papyrifera	BEPA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Larix laricina	LALA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Vaccinium myrtilloides	VAMY	25	100.00	2.6800	1.063	0.338	0.118	0.50	5.00
Vaccinium vitis-idaea	VAVI	25	88.00	1.8400	2.388	0.478	0.284	-0.0	10.00
Arctostaphylos uva-ursi	ARUV	25	56.00	1.3280	1.750	0.350	0.270	-0.0	6.00
Rosa acicularis	ROAC	25	100.00	3.7600	1.635	0.307	0.082	2.00	7.00
Prunus pensylvanica	PRPE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Amelanchier alnifolia	AMAL	25	4.00	0.0280	0.100	0.020	1.000	-0.0	0.50
Rubus strigosus	RUST	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lonicera dioica	LODI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Viburnum edule	VIED	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Hudsonia tomentosa	HUTO	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Salix bebbiana	SABE	25	84.00	1.1240	0.802	0.160	0.143	-0.0	3.00
Alnus crispa	ALER	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Ledum groenlandicum	LEGR	25	100.00	16.8800	9.762	1.952	0.103	1.00	40.00
Salix pseudomonticola	SAPS	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Symphoricarpos albus	SYAL	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Betula pumila	BEPU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Salix scouleriana	SASC	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Shepardia canadensis	SHCA	25	84.00	1.5200	2.018	0.404	0.266	-0.0	7.00
Salix sp.	SASP	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Vaccinium caespitosum	VACA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Salix myrtillifolia	SAMY	25	24.00	0.1680	0.418	0.084	0.587	-0.0	2.00
Maianthemum canadense	MACA	25	16.00	0.0240	0.101	0.020	0.818	-0.0	0.50
Aster laevis	ASLA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Anemone multifida	ANMU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Galium boreale	GABO	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Melampyrum lineare	MELI	25	88.00	0.1848	0.228	0.045	0.278	-0.0	1.00
Linnaea borealis	LIBO	25	100.00	4.0000	2.512	0.502	0.128	0.50	10.00
Campanula rotundifolia	CARO	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Solidago decumbens	SODE	25	16.00	0.0052	0.020	0.004	0.770	-0.0	0.10
Viola adunca	VIAD	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Apocynum androsaemifolium	APAN	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cornus pallida	COPA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Fragaria virginiana	FRVI	25	44.00	0.1048	0.221	0.048	0.462	-0.0	1.00
Potentilla tridentata	POTRI	25	76.00	0.1544	0.208	0.041	0.222	-0.0	0.50
Gaeaulon lividum	GELI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Pyrola virens	PYVI	25	16.00	0.0180	0.037	0.007	0.488	-0.0	0.10
Hieracium canadense	HICA	25	4.00	0.0040	0.020	0.004	1.000	-0.0	0.10
Pyrola secunda	PYSE	25	4.00	0.0200	0.100	0.020	1.000	-0.0	0.50
Epilobium angustifolium	EPAN	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Artemisia campestris	ARCA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Aralia nudicaulis	ARNU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cornus canadensis	COCA	25	100.00	5.2800	4.805	0.961	0.128	2.00	30.00
Lilium philadelphicum	LIPH	25	8.00	0.0044	0.020	0.004	0.910	-0.0	0.10
Anemone patens	ANPA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Trientalis borealis	TRBO	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Viola renifolia	VIRE	25	8.00	0.0008	0.003	0.001	0.632	-0.0	0.01
Goodyera repens	GORE	25	12.00	0.0280	0.102	0.020	0.730	-0.0	0.50
Lathyrus ochroleucus	LAOC	25	40.00	0.0844	0.182	0.033	0.385	-0.0	0.50
Vicia americana	VIAM	25	12.00	0.0244	0.101	0.020	0.828	-0.0	0.50
Potentilla palmata	PEPA	25	4.00	0.0200	0.100	0.020	1.000	-0.0	0.50
Aster ciliolatus	ASCI	25	36.00	0.0884	0.223	0.047	0.532	-0.0	1.00
Achillea millefolium	ACMI	25	8.00	0.0008	0.003	0.001	0.632	-0.0	0.01
Antennaria rosea	ANRA	25	8.00	0.0080	0.028	0.006	0.692	-0.0	0.10
Draba sp	DRSP	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Senecio sp	SESP	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Senecio sp	SESE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Senecio cymbalarioides	SECY	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Stellaria longipes	STLO	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Ranunculus sp	RACE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Labiatae sp	MINT	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Geranium bicknellii	GEBI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Arabis lyallii	ARLY	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Chenopodium sp	CHEN	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Pedicularis labradorica	PELA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Aquilegia flavescens	AQFL	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Gentianella amarella	GEAM	25	12.00	0.0012	0.003	0.001	0.583	-0.0	0.01
Rubus acaulis	RUAC	25	4.00	0.0200	0.100	0.020	1.000	-0.0	0.50
Pyrola asarifolia	PYAS	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Mitella nuda	MINU	25	4.00	0.0400	0.200	0.040	1.000	-0.0	1.00
Dryopteris punctata	DRPU	25	32.00	0.0140	0.033	0.007	0.487	-0.0	0.10
Elymus innovatus	ELIN	25	84.00	0.3724	0.450	0.090	0.243	-0.0	2.00
Carex pleniradiata	CAPL	25	12.00	0.0244	0.101	0.020	0.828	-0.0	0.50
Carex foenea	CAFO	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Dryopteris aspidifolia	DRAS	25	4.00	0.0040	0.020	0.004	1.000	-0.0	0.10
Agrostis scabra	AGSC	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Bromus ciliatus	BRCI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Schizachne purpurascens	SCPU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Juncus balticus	JUBA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Elymus glaucus	ELGL	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Calamagrostis canadensis	CACA	25	40.00	0.0352	0.060	0.010	0.288	-0.0	0.10
Calamagrostis inexpansa	CAIN	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Festuca saximontana	FESA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Bromus pumellianus	BRPU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Carex sp	CXSP	25	4.00	0.0040	0.020	0.004	1.000	-0.0	0.10
Equisetum variegatum	EQVA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lycopodium tristachyum	LYTR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lycopodium annotinum	LYAN	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equisetum sylvaticum	EQSY	25	88.00	0.0238	0.039	0.008	0.333	-0.0	0.10
Equisetum scirpoides	EQSC	25	8.00	0.0080	0.028	0.006	0.693	-0.0	0.10
Selaginella sanca	SESE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equisetum pratense	EQPR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lycopodium clavatum	LYCL	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equisetum arvense	EQAR	25	88.00	0.1736	0.240	0.048	0.276	-0.0	1.00
Prunus virginiana	PRVI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lonicera villosa	LOVI	25	4.00	0.0004	0.002	0.000	1.000	-0.0	0.01
Pedicularis groenlandica	PEGR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Smilacina nigrum	SMNI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0

BASED ON 46 POSITIVE MEANS SIMPSON'S INDEX OF DOMINANCE CONCENTRATION, C = 0.184
SHANNON-WEAVER INDEX OF DIVERSITY, H' = 3.107 (NATURAL LOGS)

46 OF THE 104 VARIABLES HAVE POSITIVE MEANS, WHICH SUM TO 80.3878

Descriptive Statistics for Each Species Variable and Each Stand
FILE A0583V3S (CREATION DATE = 04/07/83) Eighteen Stand Tables of 1982 Vascular Cover % Data (5m x 5m)
SUBFILE S1S



Descriptive Statistics for Synthetic Variables at Each Stand
FILE A0583V3S (CREATION DATE = 04/07/83) Eighteen Stand Tables of 1982 Vascular Cover % Data (5m x 5m)
SUBFILE S1S

LABEL	VARIABLE	N	PRES %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Soil temperature 5-10 cm degrees F	TEMP	13	100 00	57 3333	1 072	0 310	0 006	55 00	59 00
Total Tree Cover per Plot	TREE	25	100 00	17 2040	7 213	1 443	0 084	1 00	33 00
Tree Species Richness per Plot	TREERP	25	100 00	1 0800	0 632	0 126	0 058	0 00	3 00
Total Shrub Cover per Plot	SHRUB	25	100 00	35 4904	8 363	1 683	0 053	19 00	52 00
Shrub Species Richness per Plot	SHRUBRP	25	100 00	5 0800	0 970	0 198	0 033	3 00	9 00
Total Forb Cover per Plot	FORB	25	100 00	7 1328	3 538	0 727	0 118	2 00	20 20
Forb Species Richness per Plot	FORBRP	25	100 00	5 2000	2 414	0 503	0 106	1 00	14 00
Total Graminoid Cover per Plot	GRAM	25	00 00	0 4583	0 676	0 004	0 200	0 0	2 02
Graminoid Species Richness per Plot	GRAMRP	25	00 00	1 7500	0 970	0 194	0 110	0 0	4 00
Total Pteridophyte Cover per Plot	PTER	25	00 00	0 2052	0 390	0 052	0 253	0 0	1 11
Pteridophyte Species Richness per Plot	PTERRP	25	00 00	1 5200	0 653	0 131	0 086	0 0	3 00
Total Vascular Cover per Plot	TOT	25	100 00	80 3375	15 723	3 144	0 045	39 52	88 51
Species Richness per Plot	TOTRP	25	100 00	17 4000	4 349	0 870	0 050	12 00	30 00

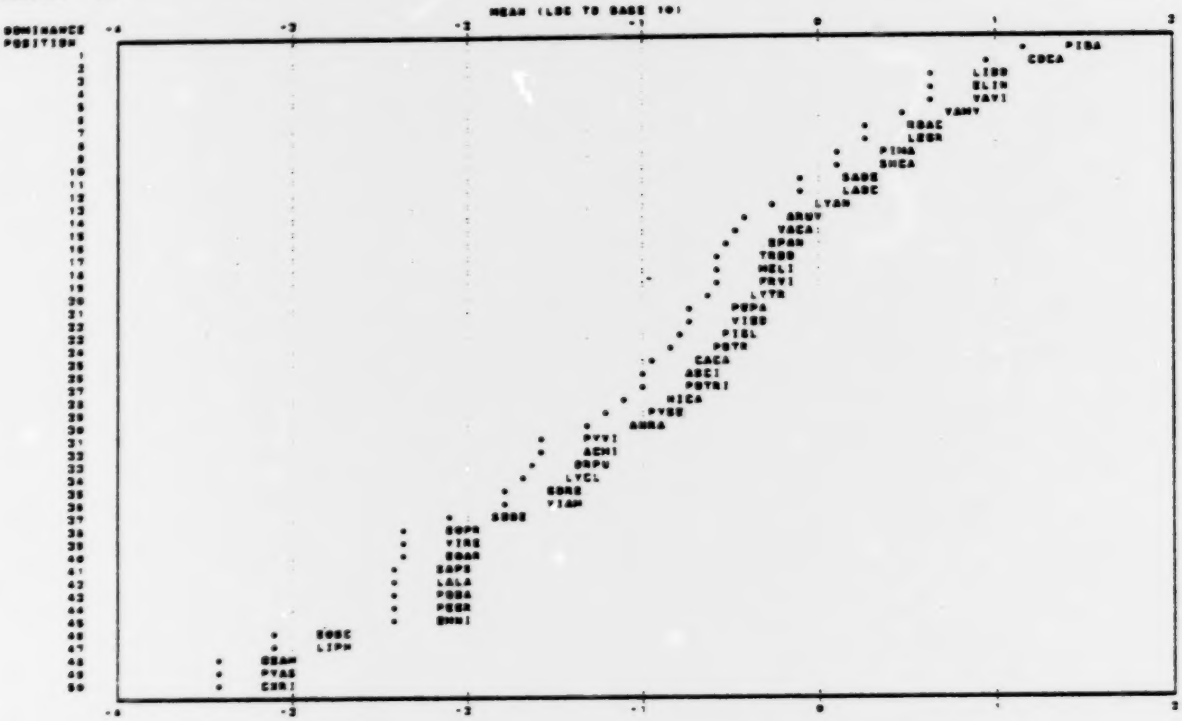
Athabasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/07/83 PAGE 55
Descriptive Statistics for Each Species Variable and Each Stand
FILE A0582V3S (CREATION DATE = 04/07/83) Eighteen Stand Tables of 1982 Vascular Cover % Data (5m x 5m)
SUBFILE S18

LABEL	VARIABLE	N	PRES %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Pinus banksiana	PIBA	25	100.00	14.3200	6.902	1.380	0.096	2.00	30.00
Picea glauca	PIGL	25	12.00	0.1880	0.374	0.075	0.488	+0.0	1.00
Picea mariana	PIMA	25	84.00	1.3280	1.988	0.400	0.301	+0.0	8.00
Populus tremuloides	POTR	25	56.00	0.1412	0.208	0.042	0.297	+0.0	0.50
Populus balsamifera	POBA	25	4.00	0.0040	0.020	0.004	1.000	+0.0	0.10
Betula papyrifera	BEPA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Larix laricina	LALA	25	4.00	0.0040	0.020	0.004	1.000	+0.0	0.10
Vaccinium myrtilloides	VAMY	25	100.00	3.1400	3.181	0.636	0.140	0.50	10.00
Vaccinium vitis-idaea	VAVI	25	88.00	4.3200	3.813	0.783	0.183	+0.0	15.00
Arctostaphylos uva-ursi	ARUV	25	36.00	0.3240	0.738	0.148	0.384	+0.0	3.00
Rosa acicularis	ROAC	25	84.00	1.8800	1.301	0.280	0.138	+0.0	4.00
Prunus pensylvanica	PRPE	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Amelanchier alnifolia	AMAL	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Rubus strigosus	RUST	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Lonicera dioica	LODI	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Viburnum edule	VIED	25	12.00	0.1880	0.557	0.111	0.618	+0.0	2.00
Hudsonia tomentosa	HUTO	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Salix bebbiana	SABE	25	60.00	0.6200	0.672	0.134	0.213	+0.0	3.00
Alnus crispa	ALCR	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Ledum groenlandicum	LEGR	25	68.00	1.8200	2.272	0.454	0.250	+0.0	10.00
Salix pseudomonticola	SAPS	25	4.00	0.0040	0.020	0.004	1.000	+0.0	0.10
Symphoricarpos albus	SYAL	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Betula pumila	BEPU	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Salix barclayana	SABC	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Shepardia canadensis	SHCA	25	32.00	1.2040	2.887	0.573	0.440	+0.0	10.00
Salix sp	SASP	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Vaccinium caespitosum	VACA	25	68.00	0.3200	0.620	0.124	0.388	+0.0	3.00
Salix myrtillifolia	SAMY	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Maianthemum canadense	MACA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Aster laevis	ASLA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Anemone multifida	ANMU	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Salix barclaii	SABB	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Melampyrum lineare	MELI	25	76.00	0.2844	0.438	0.088	0.332	+0.0	2.00
Linnaea borealis	LIBO	25	100.00	4.5200	2.220	0.444	0.098	2.00	10.00
Campanula rotundifolia	CARO	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Solidago decumbens	SODE	25	4.00	0.0040	0.020	0.004	1.000	+0.0	0.10
Viola adunca	VIAD	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Apocynum androsaemifolium	APAN	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Comandra pallida	COPA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Fragaria virginiana	FRVI	25	84.00	0.2844	0.287	0.058	0.224	+0.0	1.00
Potentilla tridentata	POTRI	25	72.00	0.1030	0.157	0.031	0.288	+0.0	0.50
Geocaulon lividum	GELI	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Pyrola virens	PYVI	25	12.00	0.0280	0.103	0.020	0.730	+0.0	0.50
Hieracium canadense	HICA	25	80.00	0.0720	0.180	0.020	0.255	+0.0	0.50
Pyrola secunda	PYSE	25	32.00	0.0840	0.138	0.028	0.332	+0.0	0.50
Epilobium angustifolium	EPAN	25	44.00	0.3180	0.570	0.114	0.361	+0.0	2.00
Artemisia campestris	ARCA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Aralia nudicaulis	ARNU	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Cornus canadensis	COCA	25	100.00	4.7200	4.482	0.880	0.181	3.00	25.00
Lilium philadelphicum	LIPH	25	8.00	0.0008	0.003	0.001	0.882	+0.0	0.01
Anemone patens	ANPA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Trientalis borealis	TRBO	25	52.00	0.2720	0.368	0.070	0.257	+0.0	1.00
Viola renifolia	VIRE	25	8.00	0.0044	0.020	0.004	0.810	+0.0	0.10
Goodyera repens	GORE	25	24.00	0.0188	0.037	0.007	0.442	+0.0	0.10
Lathyrus ochroleucus	LAOC	25	88.00	0.7820	0.856	0.171	0.218	+0.0	4.00
Viola canadensis	VIAN	25	16.00	0.0180	0.037	0.007	0.458	+0.0	0.10
Petasites palmatus	PEPA	25	24.00	0.1844	0.482	0.080	0.481	+0.0	2.00
Aster ciliolatus	ASCI	25	64.00	0.1052	0.231	0.046	0.442	+0.0	1.00
Achillea millefolium	ACMI	25	20.00	0.0252	0.101	0.020	0.801	+0.0	0.50
Artemisia racemosa	ARRA	25	16.00	0.0480	0.139	0.028	0.578	+0.0	0.50
Draba sp	DRSP	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Senecio sp	SESP	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Senecio sp	SESE	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Senecio cymbalarioides	SECY	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Stellaria longipes	STLO	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Ranunculus sp	RACE	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Labiatae sp	MINT	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Geranium bicknellii	GEBI	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Arabis lyallii	ARLY	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Chenopodium sp	CHEN	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Pedicularis labradorica	PELA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Aquilegia flavescens	AQFL	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Gentianella amarella	GEAM	25	4.00	0.0004	0.002	0.000	1.000	+0.0	0.01
Rubus pedatus	RUAC	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Pyrola asarifolia	PYAS	25	4.00	0.0004	0.002	0.000	1.000	+0.0	0.01
Mitella nuda	MINU	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Oryzopsis pungens	ORPU	25	4.00	0.0200	0.101	0.020	0.883	+0.0	0.50
Elymus innovatus	ELIN	25	100.00	4.4000	3.781	0.752	0.171	0.50	15.00
Carex richardsonii	CERI	25	4.00	0.0004	0.002	0.000	1.000	+0.0	0.01
Carex pensa	CEPS	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Oryzopsis asperifolia	ORAS	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Agrostis scabra	AGSC	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Bromus ciliatus	BRCI	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Schizachne purpurascens	SCPU	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Juncus balticus	JUBA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Elymus glaucus	ELGL	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Calamagrostis canadensis	CACA	25	28.00	0.1120	0.247	0.049	0.441	+0.0	1.00
Calamagrostis inexpansa	CAIN	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Festuca saximontana	FESA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Bromus pumpellianus	BRPU	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Carex sp	CXSP	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Equisetum variegatum	EQVA	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Lycopodium tristachyum	LYTR	25	36.00	0.3440	0.801	0.160	0.411	+0.0	3.00
Lycopodium annotinum	LYAN	25	32.00	0.1480	1.482	0.281	0.812	+0.0	3.00
Equisetum sylvaticum	EQSY	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Equisetum scirpoides	EQSC	25	4.00	0.0008	0.003	0.001	0.882	+0.0	0.01
Selaginella sanguinolenta	SESE	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Equisetum pratense	EQPR	25	4.00	0.0044	0.020	0.004	0.810	+0.0	0.10
Lycopodium clavatum	LYCL	25	4.00	0.0200	0.100	0.020	1.000	+0.0	0.50
Equisetum arvense	EQAR	25	4.00	0.0044	0.020	+0.004	0.810	+0.0	0.10
Prunus virginiana	PRVI	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Lonicera villosa	LOVI	25	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Pedicularis groenlandica	PEGR	25	4.00	0.0040	0.020	0.004	1.000	+0.0	0.10
Smilacina stellata	SMST	25	4.00	0.0040	0.020	0.004	1.000	+0.0	0.10

BASED ON 50 POSITIVE MEANS SIMPSON'S INDEX OF DOMINANCE CONCENTRATION, C = 0.125
SHANNON-WEAVER INDEX OF DIVERSITY, H' = 2.440 (NATURAL LOGS)

50 OF THE 104 VARIABLES HAVE POSITIVE MEANS, WHICH SUM TO 81.3853

```
Athabasca Oil Sands Ecological Monitoring: August 1982 Surveys                    04/07/83        PAGE   69
Descriptive Statistics for Each Species Variable and Each Stand
FILE    A0803725 (CREATION DATE = 04/07/83)   Eighteen Stand Tables of 1982 Vascular Cover % Data (5m x 5m)
SUBFILE    S18
```




```
Athabasca Oil Sands Ecological Monitoring: August 1982 Surveys                    04/07/83        PAGE   70
Descriptive Statistics for Synthetic Variables at Each Stand
FILE    A0803725 (CREATION DATE = 04/07/83)   Eighteen Stand Tables of 1982 Vascular Cover % Data (5m x 5m)
SUBFILE    S18
```

LABEL	VARIABLE	N	PRES %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Soil temperature 5-10 cm degrees F	TEMP	12	100.00	56.6333	1.505	0.458	0.008	57.00	61.00
Total Tree Cover per Plot	TREE	35	100.00	15.9572	7.481	1.488	0.094	3.80	38.70
Tree Species Richness per Plot	TREERP	35	100.00	3.4400	0.821	0.154	0.057	1.00	4.00
Total Shrub Cover per Plot	SHRUB	35	100.00	15.8580	7.788	1.857	0.863	5.70	38.70
Shrub Species Richness per Plot	SHRUBRP	35	100.00	6.7800	1.128	0.220	0.033	4.00	9.00
Total Forb Cover per Plot	FORB	35	100.00	11.3160	5.783	1.155	0.102	3.13	31.01
Forb Species Richness per Plot	FORBRP	35	100.00	8.2800	3.179	0.634	0.052	4.00	13.00
Total Graminoid Cover per Plot	GRAM	35	100.00	4.8354	3.821	0.738	0.183	0.88	15.00
Graminoid Species Richness per Plot	GRAMRP	35	100.00	1.4000	0.577	0.115	0.082	1.00	3.00
Total Pteridophyte Cover per Plot	PTER	35	93.00	0.8315	1.533	0.305	0.373	0.0	6.00
Pteridophyte Species Richness per Plot	PTERRP	35	55.00	0.6000	0.871	0.174	0.331	0.0	3.00
Total Vascular Cover per Plot	TOT	35	100.00	61.3852	12.983	3.414	0.047	33.33	76.01
Species Richness per Plot	TOTRP	35	100.00	15.7800	3.306	0.583	0.033	14.00	28.00

CPU TIME REQUIRED.. 0 16 SECONDS

```
                125 VAR LABELS      AULPAL Aulacomnium palustre                    /
                126                 BRASAL Brachythecium salebrosum                /
                127                 CERPUR Ceratodon purpureus                     /
                128                 DICPOL Dicranum polysetum                      /
                129                 DICSCO Dicranum scoparium                      /
                130                 DREUNC Drepanocladus uncinatus                 /
                131                 EURPUL Eurhynchium pulchellum                  /
                132                 HYLSPL Hylocomium splendens                    /
                133                 ORTPLA Orthodicranum flagillare                /
                134                 PLESCH Pleurozium schreberi                    /
                135                 POHNUT Pohlia nutans                           /
                136                 POLJUN Polytrichum juniperinum                 /
                137                 POLPIL Polytrichum piliferum                   /
                138                 PTICIL Ptilidium ciliare                       /
                139                 PTIPUL Ptilidium pulcherrimum                  /
                140                 PTICC  Ptilium crista-castrensis               /
                141                 CETERI Cetraria ericetorum                     /
                142                 CETPIN Cetraria pinastri                       /
                143                 CETNIV Cetraria nivalis                        /
                144                 CLACAP Cladonia capitata                       /
                145                 CLAGEN Cladonia cenotea                        /
                146                 CLACHL Cladonia chlorophaea                    /
                147                 CLACOC Cladonia coccifera                      /
                148                 CLACON Cladonia conticrea                      /
                149                 CLACOR Cladonia cornuta                        /
                150                 CLACRP Cladonia crispata                       /
                151                 CLACRT Cladonia cristatella                    /
                152                 CLAGON Cladonia gonecha                        /
                153                 CLAGRA Cladonia gracilis                       /
                154                 CLAMIT Cladina mitis                           /
                155                 CLAMUL Cladonia multiformis                    /
                156                 CLAPHY Cladonia phyllophora                    /
                157                 CLAPYX Cladonia pyxidata                       /
                158                 CLARAN Cladina rangiferina                     /
                159                 CLASTE Cladina stellaris                       /
                160                 CLASUB Cladonia subulata                       /
                161                 CLAUNC Cladonia uncialis                       /
                162                 CLAVER Cladonia verticillata                   /
                163                 LECGRA Lecidea granulosa                       /
                164                 PARSUL Parmelia sulcata                        /
                165                 PELAPH Peltigera aphthosa                      /
                166                 PELMAL Peltigera malacea                       /
                167                 PELPUL Peltigera pulverulenta                  /
                168                 PELRUF Peltigera rufescens                     /
                169                 STEALP Stereocaulon alpinum                    /
                170                 DITFLE Ditrichum flexicaule                    /
                171                 USNSPP Usnea spp.                              /
                172                 PLAGLA Platismatia glauca                      /
                173                 PARHYP Parmeliopsis hyperopta                  /
                174                 PARAMB Parmeliopsis ambigua                    /
                175                 PARELE Parmelia elegantula                     /
                176                 HYPPHY Hypogymnia physodes                     /
                177                 EVEMES Evernia mesomorpha                      /
                178                 CETNAL Cetraria halei                          /
                179                 BRYSPP Bryoria spp.                            /
                180                 CLAMMA Cladonia amaurocrea                     /
                181                 CETCUC Cetraria cucullata                      /
                182                 TOMNIT Tomanthypnum nitens                     /
                183                 TETANG Tetraplodon angustatus                  /
                184                 SPLSPP Splachnum spp.                          /
                185                 CLACAR Cladonia carioca                        /
                186                 CLASQU Cladonia squamosa                       /
                187                 BRYBPHCV BryoPhyte Cover % per Plot /
                188                 BRYBPHRP BryoPhyte Spp. Richness per Plot /
                189                 LCHTERCV Terr  Lichen Cover % per Plot /
                190                 LCHTERRP Terr  Lichen Spp. Richness per Plot /
                191                 LCHEPICV Epiph  Lichen Cover % per Plot /
                192                 LCHEPIRP Epiph  Lichen Spp. Richness per Plot/
                193                 LCHALLCV Lichen Cover % per Plot /
                194                 LCHALLRP Lichen Spp. Richness per Plot /
                195                 TOTALCV  Cover % per Plot of All Spp. /
                196                 TOTALRP  Richness per Plot of All Spp. /
                200 RUN SUBFILES    ALL
                201 TASK NAME       Descriptive Statistics for Each Species Variable and Each Stand
                202 USER1           AULPAL TO CLAVER LECGRA PELAPH TO USNSPP
                203 OPTIONS         3

***** GIVEN WORKSPACE OF  71680 BYTES ALLOWS FOR 500 VARIABLES FOR USER1 PROBLEM *****
```

Athabasca Oil Sands Ecological Monitoring Program
August 1993 Survey of Bryophyte and Lichen Plant Communities
in Pinus banksiana Reference Stands
Species Cover % Values by Sub a Plots

Stand	Plot	AULPAL	BRASAL	CERPUR	DICPOL	DICSCO	DITPLE	DREURE	EURPUL	HYLSPL	ORTPLA	PLESCH	POHNUT	POLJUN	POLPIL	PTICIL	PTIPUL
S01N	0A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.010	3.000	0.0	0.0
	0C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.010	1.000	0.0	0.0
	0E	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	.010	0.0	.010	0.0	0.0	.010	0.0	0.0
	0G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	30.000	0.0	0.0
	0I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.000	0.0	0.0
	4A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.000	0.0	0.0
	4C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.000	0.0	0.0
	4E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.000	0.0	0.0
	4G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.000	0.0	0.0
	4I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	30.000	0.0	0.0
	8A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.010	15.000	0.0	0.0
	8C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.000	0.0	0.0
	8E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.000	0.0	0.0
	8G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.000	0.0	0.0
	8I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.000	0.0	0.0
Mean		0	0	0	.00667	0	0	0	0	.00667	0	.00667	0	.00200	7.0307	0	0
S02N	0A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.000	0.0	0.0	0.0
	0C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.000	0.0	0.0	0.0
	0E	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	.100	0.0	0.0	0.0	1.000	0.0	0.0	0.0
	0G	0.0	0.0	0.0	.100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.000	0.0	0.0	0.0
	0I	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100	0.0	0.0	0.0
	4A	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100	0.0	0.0	0.0
	4C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0	0.0
	4E	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0	0.0	0.0
	4G	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0	0.0	0.0
	4I	0.0	0.0	0.0	1.000	0.0	0.0	0.0	0.0	.100	0.0	.010	0.0	1.000	0.0	0.0	0.0
	8A	0.0	0.0	0.0	.100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0	0.0	0.0
	8C	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.000	0.0	0.0	0.0
	8E	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	.010	0.0	0.0	0.0	.100	0.0	0.0	.010
	8G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100	0.0	0.0	0.0
	8I	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	.010	0.0	.010	0.0	1.000	0.0	0.0	0.0
Mean		0	0	0	.00833	0	.0	0	.0	.01667	0	.00133	0	.43833	.00733	0	.00200
S03N	0A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.000	0.0	0.0
	0C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.000	0.0	0.0
	0E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.000	0.0	0.0
	0G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	50.000	0.0	0.0
	0I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.010	30.000	0.0	0.0
	4A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	25.000	0.0	0.0
	4C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.000	0.0	0.0
	4E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.000	0.0	0.0
	4G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100	2.000	0.0	0.0
	4I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.000	0.0	0.0
	8A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.000	0.0	0.0
	8C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.000	0.0	0.0
	8E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.000	0.0	0.0
	8G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	30.000	0.0	0.0
	8I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.000	0.0	0.0
Mean		0	0	0	0	0	0	0	0	0	0	0	0	.00733	11.667	0	0
S04N	0A	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100	1.000	0.0	0.0
	0C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100	0.0	0.0
	0E	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0	0.0	2.000	0.0	0.0
	0G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100	0.0	0.0
	0I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.000	.100	0.0	0.0
	4A	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.000	.100	0.0	.010
	4C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.000	.010	0.0	0.0
	4E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.000	0.0	0.0
	4G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.000	0.0	0.0
	4I	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100	0.0	0.0
	8A	0.0	0.0	0.0	.100	0.0	0.0	0.0	0.0	0.0	0.0	.100	0.0	.100	1.000	0.0	0.0
	8C	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.000	0.0	0.0
	8E	0.0	0.0	0.0	.100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.000	0.0	0.0
	8G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0	0.0	0.0	.010	0.0	0.0	.100
	8I	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.000	1.000	0.0	0.0
Mean		0	0	0	.01733	0	0	0	0	.00667	0	.00733	0	.34800	.50733	0	.00733
S05	0A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100	3.000	0.0	0.0
	0C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.000	0.0	0.0
	0E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.000	0.0	0.0
	0G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.000	0.0	0.0
	0I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.000	0.0	0.0
	4A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.000	0.0	0.0
	4C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.000	0.0	0.0
	4E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.000	0.0	0.0
	4G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.000	0.0	0.0
	4I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.000	0.0	0.0
	8A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.000	0.0	0.0
	8C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.000	0.0	0.0
	8E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.000	0.0	0.0
	8G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.000	0.0	0.0
	8I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.000	0.0	0.0
Mean		0	0	0	.00667	0	0	0	0	0	0	0	0	.00667	2.8000	0	.0
S03	0A	0.0	.010	0.0	1.000	0.0	0.0	0.0	0.0	.100	0.0	15.000	0.0	0.0	0.0	0.0	0.0
	0C	0.0	0.0	.010	1.000	0.0	0.0	0.0	0.0	.100	0.0	1.000	0.0	.010	0.0	0.0	0.0
	0E	0.0	0.0	0.0	1.000	0.0	0.0	0.0	0.0	.010	0.0	3.000	0.0	0.0	0.0	0.0	0.0
	0G	0.0	0.0	0.0	1.000	0.0	0.0	0.0	0.0	0.0	0.0	.100	0.0	0.0	0.0	.100	0.0
	0I	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0
	4A	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4C	0.0	0.0	0.0	1.000	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	0.0
	4E	0.0	0.0	0.0	.100	0.0	0.0	0.0	0.0	.100	0.0	.100	0.0	0.0	0.0	0.0	0.0
	4G	0.0	0.0	.010	.010	0.0	0.0	0.0	0.0	0.0	0.0	1.000	0.0	0.0	0.0	0.0	0.0
	4I	0.0	0.0	0.0	.100	0.0	0.0	0.0	0.0	0.0	0.0	.100	0.0	.010	.010	0.0	0.0
	8A	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0	0.0	0.0
	8C	0.0	0.0	.010	.100	0.0	0.0	0.0	0.0	0.0	0.0	1.000	0.0	0.0	0.0	0.0	0.0

Athabasca Oil Sands Ecological Monitoring Program
August 1982 Survey of Bryophyte and Lichen Plant Communities
in Pinus Banksiana Reference Stands
Species Cover % Values by 5x5 m Plots

Stand	Plot	AULPAL	BRASAL	CERPUR	DICPSL	DICSCO	DITPLE	DREUNC	EURPUL	HYLSPL	OXYPLA	PLESCH	POHNUT	POLJUN	POLPIL	PTICIL	PTIPUL
	5E	0.0	0.0	.100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0	0.0
	5G	0.0	0.0	0.0	.100	0.0	0.0	0.0	0.0	.010	0.0	.010	0.0	0.0	0.0	.010	0.0
	5I	0.0	0.0	0.0	.100	0.0	0.0	0.0	0.0	.010	0.0	.100	0.0	0.0	0.0	0.0	0.0
Mean		0	.00067	.00667	.30333	.0	.0	.0	.0	.03200	.0	1.4260	.00067	.00267	.00800	.00733	.0
S04																	
	0A	0.0	0.0	2.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.000	2.000	0.0	0.0
	0C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.000	5.000	0.0	0.0
	0E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100	7.000	0.0	0.0
	0G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100	8.000	0.0	0.0
	0I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100	15.000	0.0	0.0
	4A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100	1.000	0.0	0.0
	4C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0	0.0	.100	0.0	0.0
	4E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100	1.000	0.0	0.0
	4G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100	1.000	0.0	0.0
	4I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.010	1.000	0.0	0.0
	8A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100	5.000	0.0	0.0
	8C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.010	1.000	0.0	0.0
	8E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100	.010	0.0	0.0
	8G	0.0	0.0	0.0	.100	0.0	0.0	0.0	0.0	.010	0.0	.100	0.0	0.0	0.0	0.0	0.0
	8I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.000	0.0	.010	0.0	0.0	0.0
Mean		0	0	.13333	.00667	.0	.0	.0	.0	.00667	.0	.07400	.0	.38200	3.0073	.0	.0
S05																	
	0A	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100	0.0	0.0
	0C	0.0	0.0	0.0	.100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.010	.100	0.0	0.0
	0E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100	0.0	0.0	0.0
	0G	0.0	.010	0.0	.010	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0	0.0	1.000	0.0	0.0
	0I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4A	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0	0.0
	4C	0.0	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100	0.0	0.0
	4E	0.0	0.0	0.0	.100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.010	.100	0.0	0.0
	4G	0.0	0.0	0.0	.100	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0	.010	0.0	0.0	.010
	4I	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0	.010	.010	0.0	0.0
	8A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0	.010	.100	0.0	0.0
	8C	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	0.0
	8E	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100	0.0	0.0
	8I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.010	.010	0.0	0.0
Mean		0	.00067	.0	.02400	.00067	.0	.0	0	.0	.0	.00133	.0	.01200	.10867	0	.00067
S07																	
	0A	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0	.010	0.0	0.0	0.0
	0C	0.0	0.0	0.0	.100	0.0	0.0	0.0	0.0	.010	0.0	.100	0.0	.100	1.000	0.0	0.0
	0E	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0	.100	.010	0.0	.010
	0G	0.0	0.0	.100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.010	.100	0.0	0.0
	0I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100	0.0	0.0	0.0
	4A	0.0	0.0	.100	.100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.000	0.0	0.0
	4C	0.0	0.0	.100	.010	.010	0.0	0.0	0.0	0.0	0.0	.100	0.0	.100	1.000	0.0	0.0
	4E	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100	1.000	0.0	0.0
	4G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.000	0.0	0.0	0.0
	4I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.000	0.0	0.0	0.0
	8A	0.0	0.0	0.0	.100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.000	0.0	0.0
	8C	0.0	0.0	.100	.100	0.0	0.0	0.0	0.0	.010	0.0	1.000	0.0	.100	.010	0.0	.100
	8E	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	0.0	0.0	.100	0.0	1.000	0.0	0.0	.010
	8G	0.0	0.0	0.0	.100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.000	0.0	0.0	0.0
	8I	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100	0.0	0.0	0.0
Mean		.0	.0	.02867	.03733	.00067	.0	.0	.0	.00133	.0	.03800	.0	.24800	.34800	.0	.00800
S08																	
	0A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100	0.0	0.0
	0E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100	0.0	0.0
	0G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100	0.0	0.0
	0I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100	0.0	0.0
	4A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.010	.100	0.0	0.0
	4C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0	0.0
	4E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100	0.0	0.0
	4G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.000	0.0	0.0
	4I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100	0.0	0.0
	8A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100	0.0	0.0
	8C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0	0.0	0.0
	8E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0	0.0
	8G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100	0.0	0.0
	8I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100	0.0	0.0
Mean		0	0	0	.0	0	0	.0	.0	.0	.0	.0	0	.00133	.12800	.0	.0
S09																	
	0A	0.0	0.0	0.0	.100	0.0	0.0	0.0	0.0	3.000	.100	15.000	0.0	.010	0.0	0.0	0.0
	0C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.000	.010	15.000	0.0	.010	0.0	0.0	.100
	0E	0.0	0.0	0.0	1.000	0.0	0.0	0.0	0.0	0.0	0.0	5.000	0.0	.100	0.0	0.0	0.0
	0G	0.0	0.0	0.0	.100	0.0	0.0	0.0	0.0	.010	0.0	7.000	0.0	.100	0.0	0.0	0.0
	0I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0	.010	0.0	0.0	0.0
	4A	0.0	0.0	0.0	1.000	0.0	0.0	0.0	0.0	20.000	0.0	55.000	0.0	0.0	0.0	0.0	.100
	4C	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	0.0	0.0	2.000	0.0	0.0	0.0	0.0	.100
	4E	0.0	0.0	0.0	.100	0.0	0.0	0.0	0.0	2.000	0.0	5.000	0.0	2.000	0.0	0.0	.100
	4G	0.0	0.0	0.0	.100	0.0	0.0	0.0	0.0	5.000	0.0	30.000	0.0	.100	0.0	0.0	.010
	4I	0.0	0.0	0.0	.100	0.0	0.0	0.0	0.0	10.000	.100	20.000	0.0	0.0	0.0	0.0	1.000
	8A	0.0	0.0	0.0	.100	0.0	0.0	0.0	0.0	5.000	0.0	50.000	0.0	0.0	0.0	0.0	.010
	8C	0.0	0.0	0.0	0.0	.100	0.0	0.0	0.0	1.000	0.0	2.000	0.0	.010	0.0	0.0	0.0
	8E	0.0	0.0	.100	1.000	0.0	0.0	0.0	0.0	.010	0.0	3.000	0.0	.100	0.0	0.0	.100
	8G	0.0	0.0	0.0	1.000	0.0	0.0	0.0	0.0	.100	0.0	3.000	0.0	.010	0.0	0.0	.010
	8I	0.0	0.0	0.0	.100	0.0	0.0	0.0	0.0	.100	0.0	1.000	0.0	.100	0.0	0.0	0.0
Mean		0	.0	.00667	.33067	.00667	.0	.0	.0	3.2147	.01400	14.867	.0	17000	0	0	.10200
S10																	
	0A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.000	0.0	0.0
	0C	0.0	0.0	0.0	1.000	0.0	0.0	0.0	0.0	0.0	0.0	1.000	0.0	0.0	1.000	0.0	0.0
	0E	0.0	0.0	0.0	1.000	0.0	0.0	0.0	0.0	0.0	0.0	2.000	0.0	0.0	0.0	0.0	0.0
	0G	0.0	0.0	0.0	1.000	0.0	0.0	0.0	0.0	0.0	0.0	2.000	0.0	0.0	0.0	0.0	.010
	0I	0.0	0.0	0.0	1.000	0.0	0.0	0.0	0.0	.100	0.0	1.000	0.0	0.0	0.0	0.0	0.0

Athabasca Oil Sands Ecological Monitoring Program
August 1982 Survey of Bryophyte and Lichen Plant Communities
in Pinus Banksiana Reference Stands
Species Cover % Values By 5x5 m Plots

Stand	Plot	AULPAL	BRASAL	CERPUR	DICPOL	DICSCO	DITPLE	DREUNC	EURPUL	HYLSPL	ORTPLA	PLESCH	POHNUT	POLJUN	POLPIL	PTICIL	PTIPUL
	4A	0.0	0.0	0.0	2.000	0.0	0.0	0.0	0.0	5.0	0.0	.100	0.0	0.0	0.0	0.0	0.0
	4C	0.0	0.0	0.0	.100	0.0	0.0	0.0	0.0	5.0	0.0	1.000	0.0	0.0	0.0	0.0	0.0
	4E	0.0	0.0	0.0	1.500	0.0	0.0	0.0	0.0	5.0	0.0	1.00	0.0	0.0	.100	0.0	0.0
	4G	0.0	0.0	0.0	2.000	0.0	0.0	0.0	0.0	5.0	0.0	1.000	0.0	0.0	0.0	0.0	0.0
	4I	0.0	0.0	0.0	1.000	0.0	0.0	0.0	.010	0.0	0.0	.100	0.0	0.0	0.0	0.0	0.0
	8A	0.0	0.0	0.0	1.000	0.0	0.0	0.0	.010	0.0	0.0	3.000	0.0	.010	0.0	0.0	.010
	8C	0.0	0.0	0.0	.100	0.0	0.0	0.0	0.0	0.0	0.0	1.000	0.0	0.0	0.0	0.0	0.0
	8E	0.0	0.0	0.0	3.000	0.0	0.0	0.0	0.0	0.0	0.0	3.000	0.0	0.0	0.0	0.0	0.0
	8G	0.0	0.0	0.0	.100	0.0	0.0	0.0	0.0	0.0	0.0	1.000	0.0	0.0	0.0	0.0	0.0
	8I	0.0	0.0	0.0	1.000	0.0	0.0	0.0	0.0	0.0	0.0	.100	0.0	0.0	.100	0.0	0.0
Mean		0	0	0	95333	0	0	0	0	.00500	0	1.0667	0	.00067	14667	0	00133
$12																	
	0A	0.0	0.0	0.0	1.000	0.0	0.0	0.0	0.0	.100	0.0	7.000	0.0	.100	0.0	0.0	0.0
	0C	0.0	0.0	0.0	1.000	.010	0.0	0.0	0.0	2.000	0.0	10.000	0.0	1.000	0.0	0.0	0.0
	0E	0.0	0.0	0.0	2.000	0.0	0.0	0.0	0.0	0.0	0.0	5.000	0.0	0.0	0.0	0.0	.100
	0G	0.0	0.0	0.0	2.000	.100	0.0	0.0	0.0	3.000	0.0	15.000	0.0	0.0	0.0	0.0	0.0
	0I	0.0	0.0	0.0	5.000	0.0	0.0	0.0	0.0	0.0	0.0	1.000	0.0	.100	0.0	0.0	.010
	4A	0.0	0.0	0.0	1.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100	0.0	0.0	.100
	4C	0.0	0.0	0.0	3.000	0.0	0.0	0.0	0.0	0.0	0.0	1.000	0.0	2.000	0.0	0.0	.100
	4E	0.0	0.0	0.0	1.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0	0.0	0.0
	4G	0.0	0.0	0.0	2.000	0.0	0.0	0.0	0.0	0.0	0.0	1.000	0.0	1.000	0.0	0.0	0.0
	4I	0.0	0.0	0.0	4.000	0.0	0.0	0.0	0.0	.100	0.0	5.000	0.0	0.0	0.0	0.0	0.0
	8A	0.0	0.0	0.0	2.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100	.100	0.0	0.0
	8C	0.0	0.0	0.0	2.000	.010	0.0	0.0	0.0	.100	0.0	1.000	0.0	3.000	0.0	0.0	0.0
	8E	0.0	0.0	0.0	3.000	0.0	0.0	0.0	0.0	.010	0.0	.100	0.0	.010	0.0	0.0	0.0
	8G	0.0	0.0	0.0	1.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100	0.0	0.0
	8I	0.0	0.0	0.0	.100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100	.010	0.0	0.0
Mean		0	0	.0	1.9400	00800	0	0	.0	.39400	.0	3.0733	.0	.80133	01400	0	02067
$14																	
	0A	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.000	.010	0.0	0.0
	0C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100	0.0	0.0	0.0
	0E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100	0.0	0.0	0.0
	0G	0.0	0.0	.010	0.0	.010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100	0.0	0.0	0.0
	0I	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100	0.0	0.0	0.0
	4A	0.0	0.0	0.0	.010	.100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.000	0.0	0.0	0.0
	4C	0.0	0.0	.010	0.0	.010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100	.010	0.0	0.0
	4E	0.0	0.0	0.0	1.000	1.000	0.0	0.0	0.0	.010	0.0	1.000	0.0	.010	.100	0.0	0.0
	4G	0.0	0.0	0.0	.100	.100	0.0	0.0	0.0	.010	0.0	1.000	0.0	0.0	0.0	0.0	0.0
	4I	0.0	0.0	0.0	.100	.100	0.0	0.0	0.0	0.0	0.0	1.000	0.0	.010	0.0	0.0	0.0
	8A	0.0	0.0	0.0	.100	.100	0.0	0.0	0.0	0.0	0.0	2.000	0.0	0.0	0.0	0.0	0.0
	8C	0.0	0.0	0.0	1.000	2.000	0.0	0.0	0.0	0.0	0.0	2.000	0.0	.100	0.0	0.0	0.0
	8E	0.0	0.0	0.0	.100	.100	0.0	0.0	0.0	0.0	0.0	1.000	0.0	2.000	0.0	0.0	0.0
	8G	0.0	0.0	0.0	1.000	3.000	0.0	0.0	0.0	.010	0.0	2.000	0.0	0.0	.010	0.0	0.0
	8I	0.0	0.0	0.0	.100	.100	0.0	0.0	0.0	.100	0.0	4.000	0.0	.100	0.0	0.0	0.0
Mean		0	.0	00133	23933	.44133	0	0	0	.00667	.0	.93333	0	31467	00933	.0	00867
$15																	
	0A	0.0	.010	0.0	.010	0.0	0.0	0.0	.510	4.000	0.0	2.000	0.0	0.0	0.0	0.0	0.0
	0C	0.0	0.0	0.0	.100	0.0	0.0	0.0	0.0	15.000	0.0	8.000	0.0	0.0	0.0	0.0	0.0
	0E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.510	1.000	0.0	.100	0.0	.010	0.0	0.0	0.0
	0G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.000	0.0	6.000	0.0	.010	0.0	0.0	.100
	0I	0.0	0.0	0.0	.100	0.0	0.0	0.0	0.0	1.000	0.0	5.000	0.0	.010	0.0	0.0	.100
	4A	0.0	0.0	0.0	.010	.010	0.0	0.0	0.0	3.000	0.0	2.000	0.0	.010	0.0	0.0	.010
	4C	0.0	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	0.0	2.000	0.0	0.0	0.0	0.0	.100
	4E	0.0	.010	0.0	.010	0.0	0.0	0.0	0.0	2.000	0.0	3.000	0.0	.010	0.0	0.0	0.0
	4G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0	.100	0.0	0.0	0.0	0.0	.010
	4I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0	.100	0.0	.010	0.0	0.0	.100
	8A	0.0	0.0	.010	0.0	0.0	0.0	0.0	0.0	.010	0.0	.100	0.0	0.0	0.0	0.0	.010
	8C	0.0	0.0	0.0	.010	.100	0.0	0.0	0.0	2.000	0.0	2.000	0.0	.010	0.0	0.0	.010
	8E	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	2.000	0.0	3.000	0.0	0.0	0.0	0.0	.100
	8G	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	1.000	0.0	2.000	0.0	0.0	0.0	0.0	0.0
	8I	0.0	0.0	1.000	0.0	0.0	0.0	0.0	0.0	.010	0.0	3.000	0.0	.100	0.0	0.0	0.0
Mean		0	.00133	.06733	01300	00867	0	0	00133	2.2030	0	3.0867	.0	01133	.0	0	04200
$19																	
	0A	0.0	.010	.100	.100	.010	0.0	0.0	0.0	3.000	0.0	3.000	0.0	.100	0.0	0.0	0.0
	0C	0.0	0.0	0.0	.100	.010	0.0	0.0	0.0	3.000	0.0	80.000	0.0	1.000	0.0	0.0	.100
	0E	0.0	0.0	0.0	.100	0.0	0.0	0.0	0.0	3.000	0.0	20.000	0.0	1.000	0.0	0.0	.100
	0G	0.0	0.0	0.0	.010	.010	0.0	0.0	0.0	30.000	0.0	35.000	0.0	.010	0.0	0.0	.010
	0I	0.0	0.0	0.0	.100	0.0	0.0	0.0	0.0	3.000	0.0	8.000	0.0	1.000	0.0	0.0	0.0
	4A	0.0	0.0	0.0	.100	0.0	0.0	0.0	0.0	15.000	0.0	85.000	0.0	.010	0.0	0.0	.010
	4C	0.0	0.0	0.0	0.0	.010	0.0	0.0	0.0	15.000	0.0	80.000	0.0	.010	0.0	0.0	0.0
	4E	0.0	0.0	0.0	.100	0.0	0.0	0.0	0.0	25.000	0.0	30.000	0.0	.100	0.0	0.0	0.0
	4G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.000	0.0	30.000	0.0	.100	0.0	0.0	0.0
	4I	0.0	0.0	0.0	.100	0.0	0.0	0.0	0.0	20.000	0.0	50.000	0.0	.100	0.0	0.0	0.0
	8A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	15.000	0.0	25.000	0.0	1.000	0.0	0.0	0.0
	8C	0.0	0.0	0.0	.100	0.0	0.0	0.0	0.0	15.000	0.0	40.000	0.0	.100	0.0	0.0	0.0
	8E	0.0	0.0	0.0	.100	.010	0.0	0.0	0.0	15.000	0.0	80.000	0.0	.010	0.0	0.0	.100
	8G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.000	0.0	15.000	0.0	3.000	0.0	0.0	0.0
	8I	0.0	0.0	0.0	.100	0.0	0.0	0.0	0.0	.100	0.0	5.000	0.0	1.000	0.0	0.0	.100
Mean		0	00067	00867	00733	00333	.0	0	0	12.467	0	33.733	00133	07533	0	0	03800

TRANSPACE REQUIRED 1000 BYTES
10 TRANSFORMATIONS
9 RECODE VALUES + LAG VARIABLES
77 IF/COMPUTE OPERATIONS

CPU TIME REQUIRED 0.05 SECONDS

```
$4 REPORT       FORMAT = NOSPACE(1) BRKSPACE(0) PTSPACE(0) LIST    /
$5              VARIABLES = PLOTNO 'Plot'(4) PTICC  TO CLACOC (5)  /
$6              HEAD = 'Athabasca Oil Sands Ecological Monitoring Program'
$7              'August 1982 Survey of Bryophyte and Lichen Plant Communities'
$8              'in Pinus Banksiana Reference Stands'
$9              'Species Cover % Values By 5x5 m Plots' /
$0              BREAK = SUBFILE 'Stand' (5)                        /
$1              SUMMARY = MEAN 'Mean'
```

REPORT REQUIRES 2864 BYTES FOR THIS TASK

Athabasca Oil Sands Ecological Monitoring Program
August 1982 Survey of Bryophyte and Lichen Plant Communities
in Pinus Banksiana Reference Stands
Species Cover % Values by 5x5 m Plots

Stand	Plot	PTICC	SPLSPP	TETANG	TOMNIT	CETCUC	CETERI	CETNIV	CLAMIT	CLARAM	CLASTE	CLASMA	CLACAP	CLACAR	CLACEN	CLACHL	CLACOC
S01N																	
	0A	0.0	0.0	0.0	0.0	0.0	.100	0.0	40.000	0.0	0.0	.010	0.0	0.0	0.0	0.0	1.000
	0C	0.0	0.0	0.0	0.0	0.0	.100	0.0	30.000	0.0	0.0	0.0	0.0	0.0	0.0	.010	.100
	0E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.000	0.0	0.0	0.0	0.0	0.0	.010	0.0	0.0
	0G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	25.000	0.0	.010	.010	0.0	0.0	0.0	.100	2.000
	0I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	30.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.000
	4A	0.0	0.0	0.0	0.0	0.0	.010	0.0	2.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.010
	4C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.000	0.0	0.0	0.0	0.0	0.0	0.0	.010	.100
	4E	0.0	0.0	0.0	0.0	0.0	.010	0.0	3.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100
	4G	0.0	0.0	0.0	0.0	0.0	.010	0.0	.100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.010
	4I	0.0	0.0	0.0	0.0	0.0	.100	0.0	5.000	0.0	0.0	0.0	0.0	0.0	0.0	.010	1.000
	8A	0.0	0.0	0.0	0.0	0.0	.100	0.0	25.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100
	8C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	15.000	0.0	0.0	0.0	0.0	0.0	0.0	.010	.010
	8E	0.0	0.0	0.0	0.0	0.0	.010	0.0	.100	0.0	0.0	0.0	0.0	0.0	0.0	.010	.010
	8G	0.0	0.0	0.0	0.0	0.0	.010	0.0	1.000	0.0	0.0	0.0	0.0	0.0	0.0	.010	.010
	8I	0.0	0.0	0.0	0.0	0.0	.100	0.0	30.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100
Mean		.0	.0	.0	.0	.0	.03867	.0	14.613	.0	.00067	.00133	.0	.0	.00867	.01067	.37000
S02N																	
	0A	0.0	0.0	0.0	0.0	0.0	.010	0.0	80.000	0.0	1.000	0.0	0.0	0.0	0.0	0.0	0.0
	0C	0.0	0.0	0.0	0.0	0.0	.100	.010	75.000	0.0	2.000	0.0	0.0	0.0	0.0	.010	0.0
	0E	0.0	0.0	0.0	0.0	0.0	.100	.010	85.000	.100	1.000	.010	0.0	0.0	0.0	.100	0.0
	0G	0.0	0.0	0.0	0.0	0.0	.100	.010	80.000	0.0	.100	0.0	0.0	0.0	0.0	0.0	0.0
	0I	0.0	0.0	0.0	0.0	0.0	.100	0.0	85.000	0.0	.100	0.0	0.0	0.0	0.0	.100	0.0
	4A	0.0	0.0	0.0	0.0	0.0	.100	0.0	80.000	0.0	.100	.010	0.0	0.0	0.0	.010	0.0
	4C	0.0	0.0	0.0	0.0	0.0	.100	0.0	85.000	0.0	.100	.010	0.0	0.0	0.0	.010	0.0
	4E	0.0	0.0	0.0	0.0	0.0	.100	0.0	70.000	0.0	.100	.010	0.0	0.0	0.0	.100	0.0
	4G	0.0	0.0	0.0	0.0	0.0	.100	.010	80.000	0.0	2.000	.010	0.0	0.0	0.0	.010	0.0
	4I	0.0	0.0	0.0	0.0	0.0	.100	0.0	80.000	0.0	2.000	.010	0.0	0.0	0.0	0.0	0.0
	8A	.010	0.0	0.0	0.0	0.0	.100	0.0	85.000	0.0	1.000	.010	0.0	0.0	0.0	.010	0.0
	8C	0.0	0.0	0.0	0.0	0.0	.100	0.0	80.000	0.0	.100	.010	0.0	0.0	0.0	.010	0.0
	8E	0.0	0.0	0.0	0.0	0.0	.100	.100	75.000	.100	2.000	0.0	0.0	0.0	.010	.100	0.0
	8G	0.0	0.0	0.0	0.0	0.0	.010	.010	80.000	.100	.010	0.0	0.0	0.0	0.0	0.0	0.0
	8I	0.0	0.0	0.0	0.0	0.0	.100	0.0	75.000	0.0	2.000	.100	0.0	0.0	0.0	.010	0.0
Mean		.00067	0	.0	.0	.0	.08800	.01000	77.000	.02000	80733	.01200	.0	.0	.00067	.03133	.0
S03N																	
	0A	0.0	0.0	0.0	0.0	0.0	.100	0.0	1.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100
	0C	0.0	0.0	0.0	0.0	0.0	1.000	0.0	1.000	0.0	0.0	0.0	0.0	0.0	0.0	.010	.010
	0E	0.0	0.0	0.0	0.0	0.0	.100	0.0	5.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100
	0G	0.0	0.0	0.0	0.0	0.0	.010	0.0	2.000	0.0	0.0	0.0	0.0	0.0	0.0	.010	.100
	0I	0.0	0.0	0.0	0.0	0.0	.100	0.0	1.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100
	4A	0.0	0.0	0.0	0.0	0.0	.010	0.0	2.000	0.0	0.0	0.0	0.0	.010	0.0	0.0	.100
	4C	0.0	0.0	0.0	0.0	0.0	.010	0.0	3.000	0.0	0.0	0.0	0.0	0.0	0.0	.010	.100
	4E	0.0	0.0	0.0	0.0	0.0	1.000	0.0	3.000	0.0	0.0	0.0	0.0	.010	0.0	0.0	.100
	4G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.000	0.0	0.0	0.0	0.0	0.0	0.0	.010	.100
	4I	0.0	0.0	0.0	0.0	0.0	.010	0.0	2.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100
	8A	0.0	0.0	0.0	0.0	0.0	.100	0.0	4.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100
	8C	0.0	0.0	0.0	0.0	0.0	.100	0.0	1.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100
	8E	0.0	0.0	0.0	0.0	0.0	.100	0.0	2.000	0.0	0.0	0.0	0.0	.010	0.0	0.0	.010
	8G	0.0	0.0	0.0	0.0	0.0	.100	0.0	1.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100
	8I	0.0	0.0	0.0	0.0	0.0	0.0	.010	3.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100
Mean		.0	.0	0	.0	.0	.18267	.00067	2.1333	.0	.0	.0	.00067	.0	.00133	.00333	.08800
S04N																	
	0A	0.0	0.0	0.0	0.0	0.0	.010	0.0	5.000	0.0	0.0	0.0	0.0	0.0	0.0	.010	.010
	0C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	50.000	0.0	0.0	0.0	0.0	0.0	0.0	.010	.010
	0E	0.0	0.0	0.0	0.0	0.0	.100	0.0	3.000	0.0	0.0	0.0	0.0	0.0	0.0	1.000	.100
	0G	0.0	0.0	0.0	0.0	0.0	.100	0.0	50.000	0.0	0.0	0.0	0.0	0.0	0.0	.100	.010
	0I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.000	0.0	0.0	0.0	0.0	0.0	0.0	.100	.010
	4A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100	0.0	0.0	0.0	0.0	0.0	0.0	.010	.010
	4C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	.010	0.0	.010	.010
	4E	0.0	0.0	0.0	0.0	0.0	.100	0.0	20.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.010
	4G	0.0	0.0	0.0	0.0	0.0	.100	0.0	5.000	0.0	0.0	0.0	0.0	0.0	0.0	.010	.010
	4I	0.0	0.0	0.0	0.0	0.0	.100	0.0	5.000	0.0	0.0	0.0	0.0	0.0	0.0	.010	.100
	8A	0.0	0.0	0.0	0.0	0.0	.010	0.0	30.000	0.0	.010	0.0	0.0	0.0	0.0	.010	.010
	8C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	0.0	0.0	0.0	0.0	0.0	.010	0.0	1.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.010
	8G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.000	0.0	0.0	0.0	0.0	0.0	.010	.010	.100
	8I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100
Mean		.0	0	.0	.0	.0	.03533	.0	15.341	.0	.00067	0	.0	.00067	.00067	.08533	.03333
S02																	
	0A	0.0	0.0	0.0	0.0	0.0	.100	0.0	80.000	0.0	0.0	0.0	0.0	0.0	0.0	1.000	1.000
	0C	0.0	0.0	0.0	0.0	0.0	.100	0.0	85.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100
	0E	0.0	0.0	0.0	0.0	0.0	.100	0.0	70.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100
	0G	0.0	0.0	0.0	0.0	0.0	.100	0.0	55.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100
	0I	0.0	0.0	0.0	0.0	0.0	.100	0.0	50.000	0.0	0.0	0.0	0.0	0.0	0.0	.010	.100
	4A	0.0	0.0	0.0	0.0	0.0	.100	0.0	15.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100
	4C	0.0	0.0	0.0	0.0	0.0	.100	0.0	40.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.000
	4E	0.0	0.0	0.0	0.0	0.0	.100	0.0	25.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.000
	4G	0.0	0.0	0.0	0.0	0.0	.010	0.0	7.000	0.0	0.0	0.0	0.0	0.0	0.0	.010	.010
	4I	0.0	0.0	0.0	0.0	0.0	.100	0.0	8.000	0.0	0.0	.010	0.0	0.0	0.0	0.0	.100
	8A	0.0	0.0	0.0	0.0	0.0	.100	0.0	5.000	0.0	0.0	0.0	0.0	0.0	0.0	.100	.100
	8C	0.0	0.0	0.0	0.0	0.0	.100	0.0	30.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100
	8E	0.0	0.0	0.0	0.0	0.0	1.000	0.0	4.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100
	8G	0.0	0.0	0.0	0.0	0.0	.100	0.0	2.000	0.0	.010	0.0	0.0	0.0	0.0	0.0	.100
	8I	0.0	0.0	0.0	0.0	0.0	.010	0.0	3.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.010
Mean		.0	.0	.0	.0	.0	.14800	.0	30.487	.0	.00067	.00067	0	.0	.00067	.07467	.33800
S03																	
	0A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0
	0C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.000	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0
	0E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	40.000	0.0	.010	0.0	0.0	0.0	.010	.010	0.0
	0G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	80.000	0.0	.010	0.0	0.0	0.0	.010	.100	0.0
	0I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	70.000	0.0	.010	0.0	0.0	0.0	0.0	.010	0.0
	4A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	15.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4C	0.0	0.0	0.0	0.0	0.0	0.0	.010	10.000	0.0	.010	0.0	0.0	0.0	.010	0.0	0.0
	4E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	70.000	0.0	.100	0.0	0.0	0.0	0.0	.010	0.0
	4G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.000	0.0	.100	0.0	0.0	0.0	.010	.010	0.0
	4I	0.0	0.0	0.0	0.0	0.0	.010	0.0	85.000	0.0	.100	0.0	0.0	0.0	.010	.010	0.0
	8A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	55.000	0.0	.100	0.0	0.0	0.0	.010	.010	0.0
	8C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	75.000	.010	100	0.0	0.0	0.0	0.0	.010	0.0

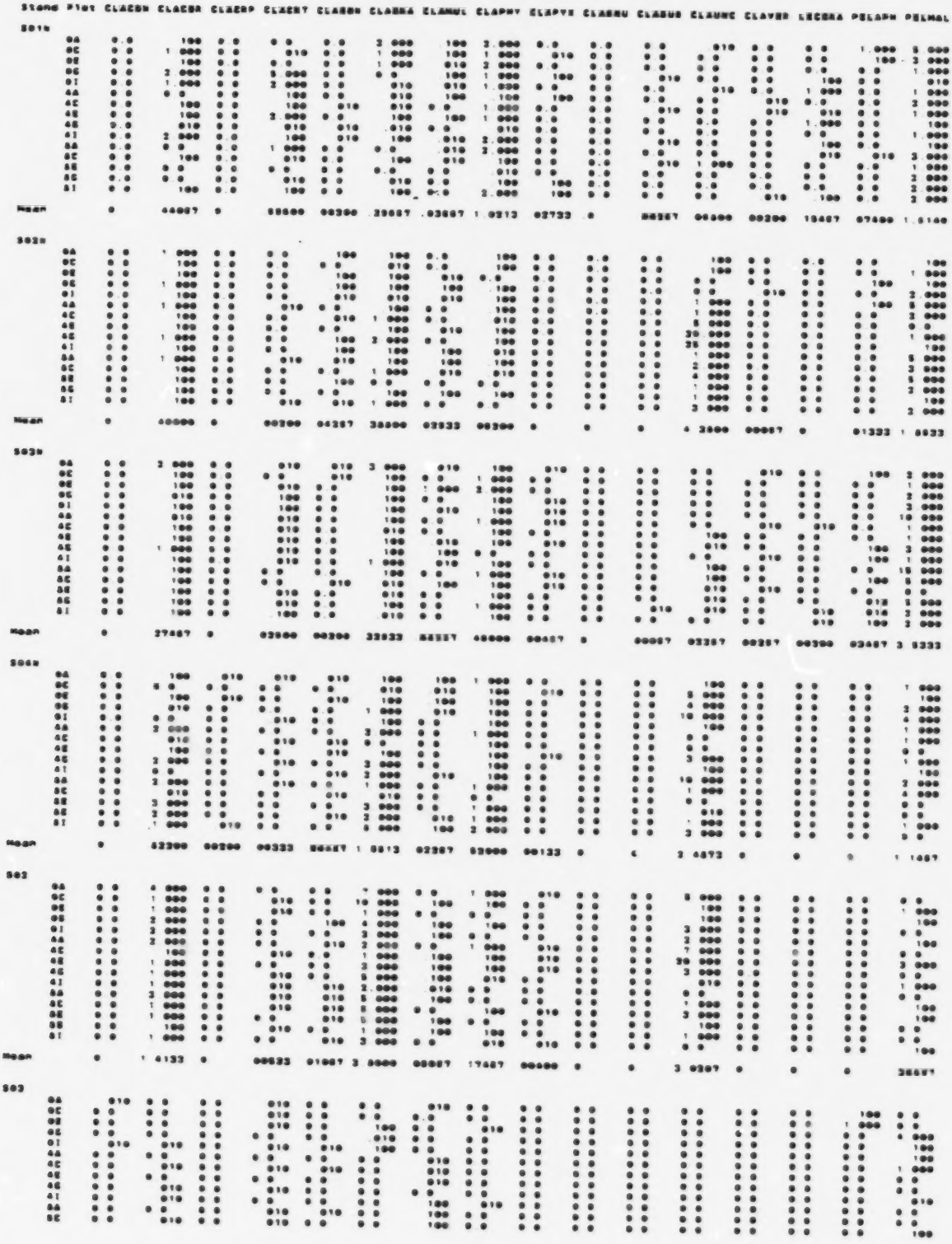
Athabasca Oil Sands Ecological Monitoring Program
August 1982 Survey of Bryophyte and Lichen Plant Communities
in Pinus Banksiana Reference Stands
Species Cover % Values by Sub m Plots

Stand	Plot	PTICE	SPLSPP	TETANE	TOMNIT	CETCUC	CETERI	CETNIV	CLAMIT	CLARAM	CLASTE	CLASUB	CLACAP	CLACAR	CLACEN	CLACHL	CLADEF
	8E	0.0	0.0	0.0	0.0	0.0	0.0	.010	55.000	0.0	1.000	0.0	0.0	0.0	0.0	.010	0.0
	8G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.000	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0
	8I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	45.000	0.0	.010	0.0	.010	0.0	.010	.010	0.0
Mean		.0	.0	.0	0	.0	.00667	.00133	40.667	.00667	.10333	0	.00667	0	.00667	.01400	.0
S04																	
	8A	0.0	0.0	0.0	0.0	0.0	.100	0.0	30.000	0.0	0.0	0.0	0.0	0.0	.010	.010	.010
	8C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	40.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	0.0	0.0	0.0	0.0	0.0	.010	.010	55.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.000
	8G	0.0	0.0	0.0	0.0	0.0	.100	0.0	55.000	0.0	.010	0.0	.010	0.0	0.0	.010	.010
	8I	0.0	0.0	0.0	0.0	0.0	.010	0.0	55.000	0.0	0.0	0.0	.010	0.0	0.0	.010	1.000
	4A	0.0	0.0	0.0	0.0	0.0	1.000	0.0	40.000	0.0	0.0	0.0	0.0	0.0	0.0	.010	.010
	4C	0.0	0.0	0.0	0.0	0.0	1.000	0.0	35.000	0.0	0.0	0.0	0.0	0.0	0.0	.010	.010
	4E	0.0	0.0	0.0	0.0	0.0	1.000	0.0	20.000	0.0	0.0	0.0	0.0	0.0	0.0	.010	.010
	4G	0.0	0.0	0.0	0.0	0.0	.100	0.0	25.000	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0
	4I	0.0	0.0	0.0	0.0	0.0	.100	0.0	20.000	0.0	0.0	0.0	.010	0.0	.010	.100	.100
	8A	0.0	0.0	0.0	0.0	0.0	.100	0.0	65.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.010
	8C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	75.000	0.0	0.0	0.0	0.0	0.0	.010	.010	.010
	8E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	75.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100
	8G	0.0	0.0	0.0	0.0	0.0	1.000	0.0	30.000	0.0	0.0	0.0	0.0	0.0	.010	.100	.010
	8I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100	0.0	0.0	0.0	.010	0.0	0.0	.010	0.0
Mean		0	0	0	0	0	.20200	.00667	36.667	0	.00667	0	.00333	0	.00400	.01033	.10133
S05																	
	8A	0.0	0.0	0.0	0.0	0.0	.100	0.0	85.000	.010	1.000	0.0	0.0	0.0	0.0	.010	.010
	8C	0.0	0.0	0.0	0.0	0.0	.100	0.0	75.000	0.0	1.000	0.0	0.0	0.0	.010	.010	0.0
	8E	0.0	0.0	0.0	0.0	0.0	.100	0.0	75.000	0.0	1.000	0.0	0.0	0.0	.010	0.0	0.0
	8G	0.0	0.0	0.0	0.0	0.0	.100	0.0	75.000	0.0	1.000	0.0	0.0	0.0	0.0	.010	0.0
	8I	0.0	0.0	0.0	0.0	0.0	0.0	.010	80.000	0.0	1.000	0.0	0.0	.010	0.0	.010	0.0
	4A	0.0	0.0	0.0	0.0	0.0	.100	.010	80.000	0.0	1.000	0.0	0.0	0.0	0.0	.010	0.0
	4C	0.0	0.0	0.0	0.0	0.0	.100	.010	80.000	0.0	1.000	0.0	0.0	0.0	0.0	.010	.010
	4E	0.0	0.0	0.0	0.0	0.0	.100	0.0	60.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	35.000	0.0	.010	0.0	0.0	0.0	0.0	.010	0.0
	4I	0.0	0.0	0.0	0.0	0.0	.100	0.0	75.000	0.0	1.000	0.0	0.0	0.0	0.0	0.0	0.0
	8A	0.0	0.0	0.0	0.0	0.0	1.000	0.0	70.000	0.0	.100	0.0	0.0	0.0	0.0	.010	0.0
	8C	0.0	0.0	0.0	0.0	0.0	.100	0.0	80.000	.010	.010	0.0	0.0	0.0	0.0	.010	0.0
	8E	0.0	0.0	0.0	0.0	0.0	.100	.010	70.000	0.0	.010	0.0	0.0	0.0	0.0	.010	0.0
	8G	0.0	0.0	0.0	0.0	0.0	.100	0.0	45.000	0.0	.100	0.0	0.0	0.0	0.0	.100	0.0
	8I	0.0	0.0	0.0	.010	0.0	.010	.010	75.000	0.0	1.000	0.0	0.0	0.0	.010	.010	.010
Mean		0	.0	.00667	0	0	.14667	.00267	68.000	.00133	.37533	0	.00133	0	.00333	.02000	.00300
S07																	
	8A	0.0	0.0	0.0	0.0	0.0	0.0	.010	45.000	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0
	8C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	55.000	0.0	0.0	0.0	0.0	0.0	0.0	.100	0.0
	8E	0.0	.010	0.0	0.0	0.0	.010	0.0	25.000	0.0	.010	0.0	0.0	0.0	0.0	.100	0.0
	8G	0.0	0.0	0.0	0.0	0.0	.010	0.0	55.000	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0
	8I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	50.000	0.0	0.0	0.0	0.0	0.0	0.0	.100	0.0
	4A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	70.000	0.0	0.0	0.0	0.0	0.0	0.0	.100	0.0
	4C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	25.000	0.0	0.0	0.0	0.0	0.0	0.0	.100	0.0
	4E	0.0	.100	0.0	0.0	0.0	.100	0.0	85.000	0.0	0.0	0.0	0.0	0.0	.010	.100	.010
	4G	0.0	0.0	0.0	0.0	0.0	.010	.010	85.000	0.0	0.0	0.0	0.0	0.0	.010	.100	0.0
	4I	0.0	0.0	0.0	0.0	0.0	.100	0.0	75.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.010
	8A	0.0	0.0	0.0	0.0	0.0	.100	0.0	75.000	0.0	0.0	0.0	0.0	0.0	.010	.100	0.0
	8C	0.0	0.0	0.0	0.0	0.0	.100	0.0	85.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.010
	8E	0.0	0.0	0.0	0.0	0.0	.010	0.0	75.000	0.0	0.0	0.0	0.0	0.0	.010	.100	0.0
	8G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	75.000	0.0	0.0	0.0	0.0	0.0	.010	.100	.010
	8I	0.0	0.0	0.0	0.0	0.0	.010	0.0	75.000	0.0	0.0	0.0	0.0	0.0	.010	0.0	0.0
Mean		.00667	.00667	0	0	.0	.01733	.00200	63.000	0	.00667	0	.0	.0	.00533	.05000	.00267
S08																	
	8A	0.0	0.0	0.0	0.0	0.0	.100	.010	80.000	.010	1.000	0.0	0.0	0.0	0.0	.100	0.0
	8C	0.0	0.0	0.0	0.0	0.0	.100	.010	80.000	0.0	1.000	0.0	0.0	0.0	.010	.100	0.0
	8E	0.0	0.0	0.0	0.0	0.0	.100	.100	80.000	0.0	1.000	0.0	.010	0.0	.010	.100	.100
	8G	0.0	0.0	0.0	0.0	0.0	.100	.100	75.000	0.0	1.000	0.0	0.0	0.0	.010	.100	.100
	8I	0.0	0.0	0.0	0.0	0.0	.100	.010	85.000	0.0	1.000	0.0	0.0	0.0	0.0	0.0	.010
	4A	0.0	0.0	0.0	0.0	0.0	.100	.010	85.000	0.0	1.000	0.0	0.0	0.0	0.0	.010	0.0
	4C	0.0	0.0	0.0	0.0	0.0	.100	.010	75.000	0.0	1.000	0.0	0.0	0.0	0.0	0.0	0.0
	4E	0.0	0.0	0.0	0.0	0.0	.100	0.0	85.000	0.0	1.000	0.0	0.0	0.0	0.0	.010	0.0
	4G	0.0	0.0	0.0	0.0	0.0	.100	0.0	85.000	0.0	1.000	0.0	0.0	0.0	0.0	.010	0.0
	4I	0.0	0.0	0.0	0.0	0.0	.100	0.0	85.000	0.0	1.000	0.0	0.0	0.0	0.0	.010	0.0
	8A	0.0	0.0	0.0	0.0	0.0	.100	0.0	80.000	0.0	1.000	0.0	0.0	0.0	0.0	.010	0.0
	8C	0.0	0.0	0.0	0.0	0.0	.100	0.0	85.000	0.0	1.000	0.0	0.0	0.0	0.0	.010	0.0
	8E	0.0	0.0	0.0	0.0	0.0	.100	0.0	85.000	0.0	1.000	0.0	0.0	0.0	0.0	.010	0.0
	8G	0.0	0.0	0.0	0.0	0.0	.100	0.0	85.000	0.0	1.000	0.0	0.0	0.0	0.0	.010	0.0
	8I	0.0	0.0	0.0	0.0	0.0	.100	0.0	75.000	0.0	1.000	0.0	0.0	0.0	0.0	.010	0.0
Mean		0	0	0	0	0	.21400	.02467	70.333	.00133	.44200	0	.00133	0	.00400	.11833	.03867
S09																	
	8A	1.000	0.0	0.0	0.0	0.0	0.0	0.0	10.000	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0
	8C	1.000	0.0	0.0	0.0	0.0	0.0	0.0	85.000	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0
	8E	.100	0.0	0.0	0.0	0.0	.010	0.0	75.000	0.0	0.0	0.0	0.0	0.0	0.0	.010	.010
	8G	.010	0.0	0.0	0.0	0.0	.010	0.0	85.000	0.0	0.0	0.0	0.0	0.0	0.0	.100	0.0
	8I	0.0	0.0	0.0	0.0	0.0	.010	0.0	70.000	0.0	0.0	0.0	0.0	0.0	0.0	.100	0.0
	4A	2.000	0.0	0.0	0.0	0.0	0.0	0.0	3.000	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0
	4C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	40.000	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0
	4E	.010	0.0	0.0	0.0	0.0	0.0	0.0	30.000	0.0	0.0	0.0	0.0	0.0	0.0	.100	0.0
	4G	.100	0.0	0.0	0.0	0.0	0.0	0.0	25.000	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0
	4I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	50.000	0.0	.100	0.0	0.0	0.0	0.0	.010	.010
	8A	.100	0.0	0.0	0.0	0.0	0.0	0.0	80.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	.100	0.0	0.0	0.0	0.0	0.0	0.0	30.000	0.0	1.000	0.0	0.0	0.0	0.0	.010	0.0
	8E	1.000	0.0	0.0	0.0	0.0	.010	0.0	85.000	0.0	.100	0.0	0.0	0.0	0.0	.010	0.0
	8G	0.0	0.0	0.0	0.0	0.0	.010	0.0	85.000	0.0	.100	0.0	0.0	0.0	0.0	.010	0.0
	8I	0.0	0.0	0.0	0.0	0.0	.010	0.0	85.000	0.0	1.000	0.0	0.0	0.0	0.0	.010	0.0
Mean		.38133	0	.0	0	0	.00400	0	50.600	.0	.18333	0	.0	0	.0	.03867	.00200
S10																	
	8A	0.0	0.0	0.0	0.0	0.0	1.000	0.0	85.000	0.0	1.000	0.0	0.0	0.0	0.0	0.0	0.0
	8C	0.0	0.0	0.0	0.0	0.0	1.000	0.0	75.000	0.0	2.000	0.0	0.0	0.0	0.0	.100	0.0
	8E	.100	0.0	0.0	0.0	0.0	.100	.010	75.000	.010	2.000	0.0	0.0	0.0	0.0	0.0	.010
	8G	.100	0.0	0.0	0.0	0.0	.100	.100	75.000	.010	1.000	0.0	0.0	0.0	0.0	.010	0.0
	8I	1.000	0.0	0.0	0.0	0.0	.100	0.0	80.000	0.0	1.000	0.0	0.0	0.0	0.0	0.0	0.0

Athabasca Oil Sands Ecological Monitoring Program
August 1983 Survey of Bryophyte and Lichen Plant Communities
in Pinus banksiana Reference Stands
Species Cover % Values by 5x5 m Plots

Stand	Plot	PTILC	SPLSPP	TETANG	TOMNIT	CETCUC	CETERI	CETNIV	CLAMIT	CLARAM	CLASTE	CLASMA	CLACAP	CLACAR	CLACEN	CLACHL	CLACOC
	4A	0.0	0.0	0.0	0.0	0.0	.100	.100	75.000	0.0	1.000	0.0	0.0	0.0	0.0	.100	0.0
	4C	0.0	0.0	0.0	0.0	0.0	1.000	.100	70.000	0.0	2.000	0.0	0.0	0.0	0.0	.010	0.0
	4E	0.0	0.0	0.0	0.0	0.0	1.000	0.0	75.000	.010	2.000	0.0	0.0	0.0	.010	.010	0.0
	4E	0.0	0.0	0.0	0.0	0.0	.100	.010	80.000	0.0	.100	0.0	0.0	0.0	0.0	0.0	0.0
	41	.010	0.0	0.0	0.0	0.0	.100	0.0	75.000	.010	3.000	0.0	0.0	0.0	0.0	.100	0.0
	4A	.100	0.0	0.0	0.0	0.0	.010	0.0	70.000	0.0	2.000	0.0	.010	0.0	0.0	0.0	0.0
	4C	.010	0.0	0.0	0.0	0.0	1.000	.010	75.000	0.0	1.000	.010	0.0	0.0	0.0	.010	0.0
	4E	0.0	0.0	0.0	0.0	0.0	1.000	0.0	80.000	0.0	1.000	0.0	0.0	0.0	0.0	.010	0.0
	4E	0.0	0.0	0.0	0.0	0.0	.100	.010	75.000	0.0	3.000	0.0	0.0	0.0	0.0	0.0	0.0
	41	0.0	0.0	0.0	0.0	0.0	.100	.100	80.000	0.0	.100	0.0	0.0	0.0	.010	.010	0.0
Mean		.00800	0	0	0	0	.45400	.03933	76.333	.00267	1.8133	.00067	.00067	0	.00133	.02400	.00067
S12																	
	0A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	60.000	0.0	.010	0.0	0.0	0.0	0.0	.010	.010
	0C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	70.000	0.0	.100	0.0	0.0	0.0	0.0	.010	0.0
	0E	0.0	0.0	0.0	0.0	0.0	.100	0.0	8.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.010
	0E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	55.000	0.0	0.0	0.0	0.0	0.0	.010	.100	.010
	01	0.0	0.0	0.0	0.0	0.0	.010	0.0	20.000	0.0	0.0	0.0	0.0	0.0	0.0	.010	.100
	4A	0.0	0.0	0.0	0.0	0.0	.100	0.0	40.000	0.0	0.0	.100	0.0	0.0	0.0	0.0	0.0
	4C	0.0	0.0	0.0	0.0	0.0	.100	0.0	15.000	0.0	.100	0.0	0.0	0.0	0.0	.100	.010
	4E	0.0	0.0	0.0	0.0	0.0	.010	0.0	10.000	0.0	0.0	.010	0.0	0.0	0.0	1.000	0.0
	4E	0.0	0.0	0.0	0.0	0.0	.100	0.0	35.000	0.0	.010	.010	0.0	0.0	0.0	.010	0.0
	41	0.0	0.0	0.0	0.0	0.0	0.0	0.0	35.000	0.0	.100	0.0	0.0	0.0	0.0	0.0	0.0
	0A	0.0	0.0	0.0	0.0	0.0	.100	0.0	40.000	0.0	.100	.100	0.0	0.0	0.0	.010	.100
	0C	0.0	0.0	0.0	0.0	0.0	.100	0.0	75.000	.010	.100	.100	0.0	0.0	0.0	0.0	0.0
	0E	0.0	0.0	0.0	0.0	0.0	.010	0.0	85.000	0.0	.010	0.0	0.0	0.0	.010	.100	0.0
	0E	0.0	0.0	0.0	0.0	0.0	.100	0.0	80.000	0.0	0.0	0.0	0.0	0.0	0.0	.100	.010
	01	0.0	0.0	0.0	0.0	0.0	.100	0.0	15.000	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0
Mean		.0	0	0	0	.0	.05533	.0	38.833	.00067	.03533	.02133	.0	.0	.00133	.00733	.01067
S14																	
	0A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.000	0.0	0.0	0.0	0.0	0.0	0.0	.010	.010
	0C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0
	0E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0
	0E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.000	0.0	0.0	0.0	0.0	0.0	0.0	.010	.010
	01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	0.0	0.0	.100	.010
	4A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100	0.0	0.0	0.0	0.0	0.0	0.0	.100	.100
	4C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	0.0	0.0	.100	.010
	4E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	0.0	0.0	.010	.100
	4E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0	0.0	0.0	.010	0.0	0.0	.100	.100
	41	0.0	0.0	0.0	0.0	0.0	.010	0.0	1.000	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0
	0A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	0.0	0.0	.100	0.0
	0C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0
	0E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0
	0E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100
	01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0
Mean		.0	0	.0	.0	.0	.00067	.0	.49200	0	0	.00067	.00133	.0	.0	.03200	.03267
S10																	
	0A	.010	0.0	0.0	0.0	0.0	0.0	0.0	.100	0.0	0.0	0.0	0.0	0.0	.100	0.0	.010
	0C	1.000	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0E	1.000	0.0	0.0	.010	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	01	.100	0.0	0.0	0.0	0.0	0.0	.010	35.000	0.0	.010	0.0	0.0	0.0	0.0	0.0	.010
	4A	.100	0.0	0.0	0.0	0.0	0.0	0.0	2.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4C	.100	0.0	0.0	0.0	0.0	0.0	0.0	5.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4E	.100	.010	0.0	0.0	0.0	0.0	0.0	10.000	0.0	0.0	0.0	0.0	0.0	.010	0.0	.010
	4E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	41	.100	0.0	0.0	0.0	0.0	0.0	0.0	25.000	0.0	.010	0.0	0.0	0.0	.010	0.0	.010
	0A	1.000	0.0	0.0	0.0	0.0	0.0	.010	5.000	0.0	0.0	0.0	0.0	0.0	.010	2.000	.010
	0C	.100	0.0	0.0	0.0	0.0	0.0	0.0	5.000	0.0	0.0	0.0	0.0	0.0	.010	.010	.010
	0E	.010	0.0	0.0	0.0	0.0	0.0	0.0	5.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.010
	0E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.000	0.0	0.0	0.0	0.0	0.0	.010	.100	.010
	01	1.000	0.0	0.0	0.0	0.0	.010	0.0	5.000	0.0	0.0	0.0	0.0	0.0	.010	.010	0.0
Mean		.30800	.00067	0	.00067	.0	.00067	.00133	8.0747	0	.00133	.0	.0	0	.01200	.14200	.00800
S16																	
	0A	.010	0.0	0.0	0.0	0.0	0.0	0.0	1.000	0.0	0.0	0.0	0.0	0.0	.010	.010	0.0
	0C	1.000	0.0	0.0	0.0	0.0	0.0	0.0	1.000	0.0	0.0	0.0	0.0	0.0	.010	.100	0.0
	0E	.100	0.0	0.0	0.0	0.0	0.0	0.0	2.000	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0
	0E	.100	0.0	0.0	0.0	0.0	0.0	0.0	3.000	0.0	0.0	0.0	0.0	0.0	0.0	.010	.010
	01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.000	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0
	4A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.000	0.0	.010	0.0	0.0	0.0	0.0	.010	0.0
	4C	5.000	0.0	0.0	0.0	0.0	0.0	0.0	.100	0.0	0.0	0.0	0.0	0.0	.010	.010	0.0
	4E	.100	0.0	0.0	0.0	0.0	0.0	0.0	1.000	0.0	0.0	0.0	0.0	0.0	.010	.010	0.0
	4E	1.000	0.0	0.0	0.0	0.0	0.0	0.0	1.000	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0
	41	1.000	0.0	0.0	0.0	0.0	0.0	0.0	.100	0.0	0.0	0.0	0.0	0.0	.010	.010	0.0
	0A	.100	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0
	0C	.100	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0E	.010	0.0	0.0	0.0	0.0	0.0	0.0	3.000	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0
	0E	.100	0.0	0.0	0.0	0.0	0.0	0.0	1.000	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0
	01	2.000	0.0	0.0	0.0	0.0	0.0	0.0	.100	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0
Mean		.70600	0	0	0	0	.00067	.0	1.3213	.0	.00067	.0	.0	0	.00467	.01333	.00067

Athabasca Oil Sands Geological Monitoring Program
August 1983 Survey of Bryophyte and Lichen Plant Communities
in Pinus Banksiana Reference Stands
Species Cover % Values By Sub in Plots



Athabasca Oil Sands Ecological Monitoring Program
August 1982 Survey of Bryophyte and Lichen Plant Communities
in Pinus Banksiana Reference Stands
Species Cover % Values By Sub = Plots

Stand	Plot	CLACON	CLACOR	CLACRI	CLACRP	CLACRT	CLADON	CLADRA	CLAMUL	CLAPHY	CLAPYX	CLASBU	CLASUB	CLAUNC	CLAVER	LECSUB	PELAPH	PELNEC
	0E	0 0	0 0	0 0		.010	.010	.010	.010	0 0	0 0	0 0	0 0	.010	0 0	0 0	0 0	0 0
	0E	0 0	.010	0 0		.010	0 0	0 0	.100	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	01	0 0	.010	0 0		.010	.010	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
Mean		00133	00667	0		00733	.00333	.01833	.03000	.00133	.0	.0	.0	.00667	.0	0	07333	35400
S04																		
	0A	0 0	0 0	0 0		.010	.010	.100	1 000	1 000	.010	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	0C	0 0	0 0	0 0		.010	0 0	.100	.010	1 000	0 0	0 0	0 0	0 0	0 0	0 0	0 0	2 000
	0E	0 0	.100	0 0		.010	.010	1 000	1 000	1 000	.010	0 0	0 0	.010	.010	0 0	0 0	1 000
	0E	0 0	.100	0 0		.010	.010	1 000	.100	2 000	0 0	0 0	0 0	.010	0 0	0 0	0 0	.010
	01	0 0	.100	.010		.010	0 0	.100	1 000	1 000	0 0	0 0	0 0	0 0	.010	0 0	0 0	3 000
	4A	0 0	.100	0 0	0 0	0 0	.010	.100	.100	2 000	0 0	0 0	0 0	0 0	0 0	0 0	0 0	3 000
	4C	0 0	1 000	0 0		.010	.010	1 000	.100	2 000	0 0	0 0	0 0	0 0	0 0	0 0	0 0	2 000
	4E	0 0	1 000	.010		.010	0 0	.010	.100	2 000	0 0	0 0	0 0	0 0	0 0	0 0	0 0	1 000
	4G	0 0	1 000	0 0		.010	.010	1 000	.100	2 000	0 0	0 0	0 0	0 0	0 0	0 0	0 0	2 000
	41	.010	.100	0 0	10 000	0 0	0 0	1 000	0 0	2 000	0 0	0 0	0 0	0 0	0 0	0 0	0 0	.100
	8A	0 0	1 000	0 0	0 0	.010	0 0	1 000	.100	.100	0 0	0 0	0 0	.100	.010	0 0	0 0	.100
	8C	0 0	1 000	0 0	0 0	0 0	.100	.100	.100	1 000	0 0	0 0	0 0	.010	0 0	0 0	0 0	1 000
	8E	0 0	1 000	0 0		.010	.010	.010	.100	0 0	0 0	0 0	0 0	.010	0 0	0 0	0 0	2 000
	8G	0 0	.100	0 0		.010	0 0	.010	.010	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	1 000
	81	0 0	0 0	0 0	0 0		.010	0 0	.100	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
Mean		00667	44000	00133	.07400	00633	43833	.28133	1 1467	.00133	0	0	0	.00833	.00200	0	0	1 2140
S05																		
	0A	0 0	.100	0 0		.010	.100	0 0	1 000	.100	0 0	0 0	0 0	.100	0 0	0 0	0 0	.100
	0C	0 0	.100	0 0		.010	.010	0 0	1 000	.010	0 0	0 0	0 0	.100	0 0	0 0	0 0	2 000
	0E	0 0	1 000	0 0	0 0	0 0	.010	0 0	.100	.100	0 0	0 0	0 0	0 0	0 0	0 0	0 0	3 000
	0E	0 0	.100	0 0		.010	.010	.010	.100	.100	0 0	0 0	0 0	.100	0 0	0 0	0 0	4 000
	01	0 0	.100	0 0		.010	.100	.100	1 000	.100	0 0	0 0	0 0	.100	0 0	0 0	0 0	3 000
	4A	0 0	.100	0 0		.010	.010	.010	.100	0 0	0 0	0 0	0 0	.010	0 0	0 0	0 0	3 000
	4C	0 0	.100	0 0	0 0	0 0	0 0	.100	.100	0 0	0 0	0 0	0 0	.010	0 0	0 0	0 0	3 000
	4E	0 0	.100	0 0		.010	.010	.100	.100	1 000	0 0	0 0	0 0	.100	0 0	0 0	0 0	3 000
	4G	0 0	0 0	0 0	0 0	0 0	0 0	0 0	.100	1 000	0 0	0 0	0 0	.100	0 0	0 0	.100	3 000
	41	0 0	.100	0 0		.010	0 0	.100	0 0	.100	0 0	0 0	0 0	0 0	0 0	0 0	0 0	3 000
	8A	0 0	.100	0 0		.010	0 0	.100	1 000	.100	0 0	0 0	0 0	.100	0 0	0 0	0 0	3 000
	8C	0 0	.100	0 0	0 0		.010	.100	.100	.100	0 0	0 0	0 0	.100	0 0	0 0	0 0	4 000
	8E	0 0	.100	0 0		.010	.010	.100	.010	.010	0 0	0 0	0 0	0 0	0 0	0 0	0 0	2 000
	8G	0 0	.100	0 0		.010	.100	.100	.100	.100	0 0	0 0	0 0	.010	0 0	0 0	0 0	3 000
	81	0 0	.100	0 0	0 0		.010	.100	1 000	.100	0 0	0 0	0 0	.100	0 0	0 0	0 0	1 000
Mean		0	10333	.0	.00667	02533	06800	48400	13467	.0	0	0	.00200	0	0	00667	3 4733	
S07																		
	0A	0 0	.100	0 0		.010	.010	.100	1 000	.100	0 0	0 0	0 0	0 0	0 0	0 0	0 0	3 000
	0C	0 0	1 000	.010		.010	.010	1 000	.100	.100	0 0	0 0	0 0	0 0	0 0	0 0	1 000	4 000
	0E	0 0	1 000	0 0		.010	.010	.100	.100	.100	0 0	0 0	0 0	0 0	0 0	0 0	0 0	1 000
	0E	0 0	.100	0 0		.010	.010	.010	.100	.010	0 0	0 0	0 0	0 0	0 0	0 0	1 000	3 000
	01	0 0	.100	0 0		.010	.010	.100	1 000	0 0	0 0	0 0	0 0	0 0	0 0	0 0	.100	4 000
	4A	0 0	.100	0 0		.010	0 0	.100	.100	.100	0 0	0 0	0 0	0 0	0 0	0 0	0 0	1 000
	4C	0 0	1 000	0 0		.010	.100	.100	.100	.100	0 0	0 0	0 0	0 0	0 0	0 0	0 0	2 000
	4E	0 0	1 000	0 0		.100	.010	.100	.100	1 000	0 0	0 0	0 0	0 0	0 0	0 0	0 0	4 000
	4G	0 0	2 000	0 0		.010	0 0	.100	1 000	.100	0 0	0 0	0 0	0 0	0 0	0 0	0 0	1 000
	41	0 0	.100	0 0		.010	.100	.100	1 000	1 000	.010	0 0	0 0	0 0	0 0	0 0	.100	3 000
	8A	0 0	3 000	0 0		.010	0 0	.100	1 000	.010	0 0	0 0	0 0	0 0	0 0	0 0	0 0	1 000
	8C	0 0	1 000	0 0		.010	0 0	.100	.100	.010	0 0	0 0	0 0	0 0	0 0	0 0	.100	2 000
	8E	0 0	.100	0 0	0 0	0 0	.010	.100	.100	.100	0 0	0 0	0 0	0 0	0 0	0 0	0 0	.100
	8G	0 0	1 000	0 0		.010	0 0	.100	1 000	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	1 000
	81	0 0	.100	0 0		.010	.100	1 000	.100	.100	0 0	0 0	0 0	0 0	0 0	0 0	0 0	4 000
Mean		0	71333	00667	01533	02533	21400	48000	18867	00667	.0	0	.0	0	0	0	10333	3 3400
S08																		
	0A	0 0	.100	0 0		.100	0 0	.100	1 000	.100	0 0	0 0	0 0	.100	0 0	0 0	0 0	1 000
	0C	0 0	1 000	0 0		.100	.010	.100	1 000	0 0	0 0	0 0	0 0	.100	0 0	0 0	0 0	1 000
	0E	0 0	.100	0 0		.100	.100	.100	1 000	.100	0 0	0 0	0 0	.100	0 0	0 0	0 0	1 000
	0E	0 0	.100	0 0		.100	.010	.100	1 000	0 0	0 0	0 0	.010	1 000	0 0	0 0	0 0	3 000
	01	0 0	.100	.010		.010	.010	.100	1 000	.100	0 0	0 0	0 0	0 0	0 0	0 0	0 0	.100
	4A	0 0	.100	0 0		.100	.010	.100	1 000	0 0	0 0	0 0	0 0	1 000	0 0	0 0	0 0	0 0
	4C	0 0	.100	0 0	0 0	.010	0 0	1 000	0 0	0 0	.010	0 0	0 0	2 000	0 0	0 0	0 0	1 000
	4E	0 0	.100	0 0		.010	.010	.100	1 000	0 0	0 0	0 0	0 0	.100	0 0	0 0	0 0	1 000
	4E	0 0	.100	0 0		.010	.010	.100	1 000	.010	0 0	0 0	0 0	.100	.010	0 0	0 0	.100
	41	0 0	0 0	0 0		.010	.100	1 000	1 000	.100	.010	0 0	0 0	.100	0 0	0 0	0 0	0 0
	8A	0 0	1 000	0 0		.010	.100	1 000	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	8C	0 0	.100	0 0		.100	.010	.100	1 000	.100	0 0	0 0	0 0	0 0	0 0	0 0	0 0	4 000
	8E	0 0	.100	0 0		.010	.010	.100	0 0	.100	0 0	0 0	0 0	.010	0 0	0 0	0 0	1 000
	8G	0 0	.100	0 0	0 0	.010	0 0	.100	1 000	0 0	0 0	0 0	0 0	.100	0 0	0 0	0 0	0 0
	81	0 0	.100	0 0		.100	.010	.100	1 000	1 000	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
Mean		0	21333	00667	00133	03267	20733	74667	17400	00133	.0	00667	31400	00667	0	0	01333	
S09																		
	0A	0 0	.010	0 0	0 0	0 0	.010	.010	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	1 000
	0C	.010	.100	0 0	0 0	.010	.100	.100	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	7 000
	0E	0 0	1 000	0 0	.010	.100	.010	.010	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	2 000
	0E	0 0	.100	.010	0 0	0 0	.100	.100	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	10 000
	01	0 0	.100	0 0	.100	.010	.010	.010	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	2 000
	4A	0 0	.010	0 0	0 0	0 0	0 0	.010	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	4C	0 0	.010	0 0	0 0	0 0	.010	.100	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	1 000	2 000
	4E	0 0	.100	0 0	0 0	0 0	.010	.100	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	3 000	3 000
	4E	0 0	.100	0 0	0 0	0 0	0 0	.100	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	.100	1 000
	41	0 0	.100	0 0	0 0	.100	.100	0 0	0 0	.010	0 0	0 0	0 0	0 0	0 0	0 0	1 000	3 000
	8A	0 0	.100	0 0	0 0	0 0	0 0	0 0	0 0	.010	0 0	0 0	0 0	0 0	0 0	0 0	0 0	1 000
	8C	0 0	.010	0 0	0 0	0 0	0 0	.010	0 0	.010	0 0	0 0	0 0	.010	0 0	0 0	1 000	4 000
	8E	0 0	.100	0 0	.010	0 0	0 0	.100	0 0	.100	0 0	0 0	0 0	0 0	0 0	0 0	.100	3 000
	8G	0 0	.100	0 0	.100	0 0	.010	.100	0 0	.010	0 0	0 0	0 0	0 0	0 0	0 0	.100	3 000
	81	0 0	1 000	0 0	0 0	.010	.100	.100	0 0	.010	0 0	0 0	0 0	0 0	0 0	0 0	.100	3 000
Mean		00667	19000	00667	.00667	01667	05000	05133	00333	0	0	0	00133	0	0	0	38000	2 9333
S10																		
	0A	0 0	.100	0 0	0 0	0 0	.100	1 000	.100	.010	0 0	0 0	0 0	.100	0 0	0 0	0 0	3 000
	0C	0 0	1 000	0 0	.010	.010	1 000	.100	.100	0 0	0 0	0 0	0 0	1 000	0 0	0 0	0 0	1 000
	0E	0 0	1 000	0 0	.010	0 0	1 000	.100	.100	0 0	0 0	0 0	0 0	1 000	0 0	0 0	0 0	2 000
	0E	0 0	.100	0 0	0 0	0 0	.100	0 0	.100	0 0	0 0	0 0	0 0	.100	0 0	0 0	0 0	3 000
	01	0 0	.010	0 0	0 0	0 0	.100	0 0	0 0	.100	0 0	0 0	0 0	.010	0 0	0 0	0 0	3 000

Athabasca Oil Sands Geological Monitoring Program
August 1982 Survey of Bryophyte and Lichen Plant Communities
in Pinus banksiana Reference Stands
Species Cover % Values By Sub # Plots

Stand	Plot	CLACON	CLACOR	CLACRP	CLACRT	CLASBR	CLASBU	CLASRA	CLAMUL	CLAPHY	CLAPYX	CLASBU	CLASUB	CLAUNC	CLAVER	LECERA	PELAPH	PELMAL
	4A	0 0	1.000	0 0	0.0	0.0	1.000	.010	.010	0 0	0.0	0 0		.010	0 0	0 0	0 0	1.000
	4C	0 0	.100	0 0	0.0	0 0	.100	0.0	0 0	0 0	0.0	0 0		.010	0 0	0 0	0 0	1.000
	4E	0 0	2.000	.010	.010	2.000	0.0	.100	0 0	0 0	0.0	.010		.100	0 0	0 0	0 0	.100
	4G	0 0	2.000	0 0	.010	1.000	0 0	.010	0 0	0 0	0.0	0 0		1.000	0 0	0 0	0 0	.100
	4I	0 0	1.000	0 0	0.0	0 0	.100	.010	0 0	0 0	0.0	0 0		.010	0 0	0 0	0 0	2.000
	4A	0 0	1.000	0 0	.010	.010	.100	0 0	0 0	0 0	0.0	0 0		1.000	0 0	0 0	0 0	3.000
	4C	0 0	.100	0 0	0.0	0 0	.100	.100	.100	0 0	0.0	0 0		.100	0 0	0 0	0 0	3.000
	4E	0 0	.100	0 0	0.0	0 0	.100	0.0	.010	0 0	0.0	0 0		1.000	0 0	0 0	0 0	3.000
	4G	0 0	.100	0 0	0.0	.010	.100	.100	.100	0 0	0.0	0 0		1.000	0 0	0 0	.010	1.000
	4I	0 0	.100	0 0	0.0	.010	.100	0.0	.100	0 0	0.0	0 0		.100	0 0	0 0	0 0	3.000
Mean		0	.84733	.00667	.00333	.00333	.05667	.00467	.00533	.00667	.00667	0		.42500	0	0	.00667	1.8133
512																		
	8A	0 0	.100	0 0	0 0	0 0	.100	0 0	.100	0 0	0 0	0 0		0 0	0 0	0 0	0 0	4.000
	8C	0 0	1.000	0 0	0 0	0 0	.100	0 0	.010	0 0	0 0	0 0		0 0	0 0	0 0	0 0	3.000
	8E	0 0	0 0	0 0	0 0	.010	2.000	.100	.100	0 0	0 0	0 0		0 0	0 0	0 0	0 0	2.000
	8G	0 0	1.000	0 0	0 0	.010	1.000	.100	.010	0 0	0 0	0 0		0 0	0 0	0 0	0 0	1.000
	8I	0 0	2.000	0 0	0 0	0 0	3.000	.100	0 0	.010	0 0	0 0		0 0	0 0	0 0	0 0	3.000
	4A	0 0	1.000	0 0	0 0	0 0	2.000	.100	.100	0 0	0 0	0 0		0 0	0 0	0 0	0 0	.100
	4C	0 0	.100	0 0	0 0	0 0	2.000	.100	.100	0 0	0 0	0 0		0 0	0 0	0 0	0 0	3.000
	4E	0 0	.100	0 0	.010	.010	2.000	.100	.100	0 0	0 0	0 0		0 0	0 0	0 0	0 0	.100
	4G	0 0	1.000	0 0	0 0	.010	1.000	.100	.010	0 0	0 0	0 0		0 0	0 0	0 0	0 0	.100
	4I	0 0	.100	0 0	0 0	.010	2.000	0 0	.100	0 0	0 0	0 0		0 0	0 0	0 0	0 0	1.000
	8A	0 0	1.000	0 0	.010	.010	.100	.100	0 0	.100	0 0	0 0		0 0	0 0	0 0	.100	3.000
	8C	0 0	.100	0 0	0 0	.010	2.000	0 0	.100	0 0	0 0	0 0		0 0	0 0	0 0	0 0	1.000
	8E	0 0	1.000	0 0	0 0	0 0	1.000	.100	.100	0 0	0 0	0 0		0 0	0 0	0 0	0 0	1.000
	8G	0 0	3.000	0 0	0 0	.010	1.000	.100	.100	0 0	0 0	0 0		0 0	0 0	0 0	0 0	3.000
	8I	0 0	1.000	0 0	0 0	0 0	2.000	.100	.100	0 0	0 0	0 0		0 0	0 0	0 0	0 0	3.000
Mean		0	.78667	.0	.01000	.00400	1.4200	.07333	.06533	.00667	0	.0		0	0	.0	.00667	2.6133
514																		
	8A	0 0	.010	0 0	.010	.010	.100	.010	.010	0 0	0 0	0 0		.100	0 0	0 0	.010	2.000
	8C	0 0	.010	0 0	.100	.010	0 0	.010	.010	0 0	0 0	0 0		.010	0 0	0 0	0 0	1.000
	8E	0 0	0 0	0 0	0 0	0 0	.010	.010	.100	0 0	0 0	0 0		.010	.010	0 0	.100	2.000
	8G	0 0	.100	0 0	.010	0 0	.010	.100	.100	0 0	0 0	0 0		.010	0 0	0 0	0 0	1.000
	8I	0 0	.100	0 0	.010	0 0	.010	1.000	.010	0 0	0 0	0 0		1.000	0 0	0 0	.100	2.000
	4A	0 0	1.000	0 0	.010	0 0	.100	.100	1.000	0 0	0 0	0 0		.010	0 0	0 0	0 0	1.000
	4C	0 0	1.000	0 0	.010	0 0	.100	0 0	1.000	0 0	0 0	0 0		.010	0 0	0 0	0 0	1.000
	4E	0 0	0 0	0 0	.010	0 0	.010	1.000	.100	0 0	0 0	0 0		.010	.010	0 0	.010	3.000
	4G	0 0	.100	0 0	.010	0 0	.010	.100	.010	0 0	0 0	0 0		.010	0 0	0 0	.010	1.000
	4I	.100	1.000	0 0	0 0	0 0	.100	.100	.010	1.000	0 0	0 0		.010	0 0	0 0	0 0	3.000
	8A	0 0	.100	0 0	.010	0 0	.010	.010	0 0	0 0	0 0	0 0		.010	.010	0 0	.100	1.000
	8C	0 0	.100	0 0	.010	0 0	.010	.010	0 0	0 0	0 0	0 0		.010	0 0	0 0	0 0	1.000
	8E	0 0	1.000	0 0	0 0	.010	1.000	.100	.100	0 0	0 0	0 0		0 0	0 0	0 0	.100	1.000
	8G	0 0	0 0	0 0	.010	0 0	0 0	.100	.100	.100	0 0	0 0		3.000	0 0	0 0	0 0	4.000
	8I	0 0	0 0	0 0	0 0	0 0	0 0	.100	.100	0 0	0 0	0 0		.010	0 0	0 0	0 0	1.000
Mean		00667	.38333	0	.01333	.00333	.24333	.10333	.33533	0	.0	0		.33500	.00500	0	.02667	1.8733
515																		
	8A	0 0	.100	0 0	0 0	0 0	.010	.010	0 0	0 0	0 0	0 0		0 0	0 0	0 0	.100	0 0
	8C	0 0	0 0	0 0	0 0	0 0	.100	.100	.100	0 0	0 0	0 0		0 0	0 0	0 0	1.000	0 0
	8E	0 0	.010	0 0	.010	0 0	.100	.100	1.000	.100	0 0	0 0		0 0	0 0	0 0	3.000	0 0
	8G	0 0	.100	0 0	0 0	0 0	.100	.100	.010	0 0	0 0	0 0		0 0	0 0	0 0	0 0	0 0
	8I	0 0	.100	0 0	0 0	0 0	.010	.100	.100	0 0	0 0	0 0		0 0	.010	0 0	1.000	0 0
	4A	0 0	1.000	0 0	0 0	0 0	.010	.100	.100	0 0	0 0	0 0		0 0	0 0	0 0	1.000	1.000
	4C	0 0	.100	0 0	0 0	0 0	.100	.100	.010	0 0	0 0	0 0		0 0	0 0	0 0	0 0	0 0
	4E	0 0	.100	0 0	.010	0 0	.100	.100	.100	0 0	0 0	0 0		0 0	0 0	0 0	.100	0 0
	4G	0 0	1.000	0 0	0 0	0 0	.100	.100	.010	0 0	0 0	0 0		0 0	0 0	0 0	.010	1.000
	4I	3.000	1.000	0 0	0 0	0 0	.100	.100	0 0	.100	0 0	0 0		0 0	0 0	0 0	0 0	0 0
	8A	1.000	.100	0 0	.010	0 0	.100	.100	.100	0 0	0 0	0 0		0 0	0 0	0 0	.010	1.000
	8C	0 0	.100	0 0	0 0	.010	.010	.100	.100	0 0	0 0	0 0		0 0	0 0	0 0	1.000	1.000
	8E	0 0	1.000	0 0	0 0	.010	.100	.100	.010	0 0	0 0	0 0		0 0	.010	0 0	0 0	1.000
	8G	0 0	1.000	0 0	0 0	0 0	.100	.100	0 0	0 0	0 0	0 0		0 0	0 0	0 0	0 0	1.000
	8I	0 0	.100	0 0	0 0	.010	.100	.100	.100	0 0	0 0	0 0	.010	0 0	0 0	0 0	0 0	0 0
Mean		0	.51000	0	.00333	.00333	.05000	.03000	.00367	0	0	.00667	.00667	.00667	0	.43000	.03333	
518																		
	8A	0 0	.100	0 0	.010	.010	.100	.010	0 0	0 0	0 0	0 0	0 0	0 0	0 0	1.000	0 0	
	8C	0 0	.100	0 0	.010	.010	.100	.100	.010	0 0	0 0	0 0	0 0	0 0	0 0	1.000	0 0	
	8E	0 0	.100	0 0	.010	.010	.100	.100	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	
	8G	0 0	.010	0 0	.010	.010	.100	.100	0 0	0 0	0 0	0 0	0 0	0 0	0 0	2.000	0 0	
	8I	0 0	1.000	0 0	.010	.010	.100	.100	0 0	0 0	0 0	0 0	0 0	0 0	0 0	2.000	0 0	
	4A	0 0	.010	0 0	0 0	0 0	.100	.100	0 0	0 0	0 0	0 0	0 0	0 0	0 0	.100	0 0	
	4C	0 0	0 0	0 0	0 0	0 0	.100	.100	0 0	0 0	0 0	0 0	0 0	0 0	0 0	1.000	0 0	
	4E	0 0	.010	0 0	0 0	0 0	.010	.100	0 0	0 0	0 0	0 0	0 0	0 0	0 0	.100	0 0	1.000
	4G	0 0	.010	0 0	0 0	.010	.100	.100	0 0	.010	0 0	0 0	0 0	0 0	0 0	.010	0 0	
	4I	0 0	.010	0 0	0 0	.010	.100	.100	0 0	0 0	0 0	0 0	0 0	0 0	0 0	.010	0 0	
	8A	1.000	.010	0 0	.010	.010	.100	.100	0 0	.100	0 0	0 0	0 0	0 0	0 0	1.000	0 0	
	8C	0 0	.010	0 0	0 0	.010	.100	.100	0 0	0 0	0 0	0 0	0 0	0 0	0 0	1.000	0 0	
	8E	0 0	.010	0 0	0 0	.010	.100	.100	0 0	0 0	0 0	0 0	0 0	0 0	0 0	1.000	0 0	
	8G	0 0	.100	0 0	0 0	.010	.100	.100	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	.010
	8I	0 0	1.000	0 0	0 0	.010	.100	.100	0 0	.010	0 0	0 0	0 0	0 0	0 0	.100	0 0	
Mean		0	.33000	0	.00400	.00333	.05000	.13667	.00333	0	0	0	0	0	0	.05000	.00733	

Athabasca Oil Sands Ecological Monitoring Program
August 1983 Survey of Bryophyte and Lichen Plant Communities
in Pinus banksiana Reference Stands
Species Cover % Values by Sub m Plots

Stand	Plot	PELPUL	PELRUF	SYBALP	BRYSPP	CETNAL	CETPIN	EVERMS	HYPPHY	PARELE	PARSUL	PARAMB	PARHYP	PLABLA	USNSPP
S01N															
	0A	0 0	0.0	0 0	0 0	0.0	010	0.0	0.0	0 0	0.0	010	010	0 0	0.0
	0C	0 0	0.0	010	0 0	0.0	10 000	0.0	0.0	0.0	0.0	0 0	0 0	0.0	0.0
	0E	0 0	0.0	0 0	0 0	010	100	0.0	1.000	0.0	100	0 0	0 0	0 0	010
	0G	0 0	0.0	0 0	0 0	0 0	010	0.0	0.0	0.0	0.0	0 0	0 0	0 0	0 0
	01	0 0	0.0	0 0	0 0	0 0	010	0.0	0.0	0.0	0.0	0 0	0 0	0 0	0 0
	4A	0 0	0.0	0 0	0 0	0.0	010	0.0	0.0	100	0.0	010	0.0	0 0	010
	4C	0 0	0.0	0 0	0 0	0 0	010	0.0	0 0	0.0	0.0	0 0	0 0	0 0	0 0
	4E	0 0	010	0 0	0 0	0 0	010	0.0	0.0	0.0	0.0	010	010	0 0	0 0
	4G	0 0	0.0	0 0	0 0	010	010	010	0.0	0.0	0.0	010	010	0 0	010
	41	0 0	010	0 0	0 0	0.0	100	0.0	0.0	0.0	0.0	010	0 0	0 0	0 0
	8A	0 0	0.0	0 0	0 0	0.0	010	0.0	0.0	0.0	0.0	0 0	0 0	0 0	0 0
	8C	0 0	0.0	0 0	0 0	0.0	010	0.0	0.0	0.0	0.0	010	0 0	0 0	0 0
	8E	0 0	0.0	0 0	0 0	0 0	010	0.0	0 0	100	0.0	0 0	0 0	0 0	100
	8G	0 0	010	0 0	010	0 0	010	0.0	0 0	100	0.0	0 0	010	0 0	010
	81	0 0	0.0	010	0 0	0 0	010	0.0	0 0	0 0	0.0	010	0 0	0 0	0 0
Mean		0	.00200	.00133	.00067	.00133	.03800	.00067	.06733	.0	.00800	.01133	.00267	.0	.00333
S03N															
	0A	0 0	0.0	0 0	010	100	010	010	100	0 0	0 0	010	010	0 0	010
	0C	0 0	0.0	0 0	010	100	010	010	100	0 0	0 0	010	010	0 0	100
	0E	0 0	0.0	0 0	010	100	010	010	010	0 0	0.0	010	010	0 0	1 000
	0G	0 0	0.0	0 0	100	100	010	010	010	0 0	0 0	010	010	0 0	010
	01	0 0	0.0	0 0	010	100	010	010	010	0 0	0.0	010	010	0 0	010
	4A	0 0	0.0	0 0	010	1 000	010	010	010	0 0	0 0	010	010	0 0	100
	4C	0 0	0.0	0 0	010	010	010	010	100	0 0	0 0	010	010	0 0	100
	4E	0 0	0.0	0 0	010	100	010	010	100	0 0	010	010	010	0 0	100
	4G	0 0	0.0	0 0	010	100	010	010	100	0 0	010	010	010	0 0	100
	41	0 0	0.0	0 0	010	100	010	100	100	0 0	0 0	010	010	0 0	100
	8A	0 0	0.0	0 0	010	100	010	010	100	0 0	010	010	010	0 0	010
	8C	0 0	0.0	0 0	010	100	010	010	010	0 0	0 0	010	010	0 0	010
	8E	0 0	0.0	0 0	010	010	010	010	010	0 0	0 0	010	010	0 0	100
	8G	0 0	0.0	0 0	010	100	010	010	010	0 0	0 0	010	010	0 0	100
	81	0 0	0.0	0 0	010	1 000	010	010	100	0 0	010	010	010	0 0	100
Mean		0	.0	.0	.01000	.20000	.01000	.01000	.05200	.0	.01000	.01000	.01000	0	.12000
S03N															
	0A	0 0	0.0	0 0	010	010	010	0 0	0 0	0 0	0 0	100	010	0 0	010
	0C	0 0	0.0	0 0	010	100	0 0	0 0	010	0 0	0 0	100	010	0 0	010
	0E	0 0	0.0	0 0	010	010	0 0	0 0	010	0 0	0 0	100	010	0 0	010
	0G	0 0	0.0	0 0	010	0 0	010	010	0 0	0 0	0.0	010	010	0 0	010
	01	0 0	0.0	0 0	010	010	010	0 0	0 0	0 0	0 0	010	010	0 0	010
	4A	0 0	0.0	0 0	010	010	010	010	0 0	0 0	0 0	010	0 0	0 0	010
	4C	0 0	0.0	0 0	010	010	010	0 0	100	0 0	0 0	010	010	0 0	010
	4E	0 0	0.0	0 0	010	010	010	0 0	010	0 0	0 0	010	010	0 0	010
	4G	0 0	0.0	0 0	010	010	010	0 0	010	0 0	0 0	010	010	0 0	010
	41	0 0	0.0	0 0	010	100	010	010	010	0 0	0 0	010	010	0 0	010
	8A	0 0	0.0	0 0	0 0	0 0	010	0 0	0 0	0 0	0 0	100	010	0 0	010
	8C	0 0	0.0	0 0	010	010	010	0 0	010	0 0	0 0	010	010	0 0	010
	8E	0 0	0.0	0 0	010	010	010	010	010	0 0	0 0	010	0 0	0 0	010
	8G	0 0	0.0	0 0	010	010	010	0 0	010	0 0	0 0	100	010	0 0	010
	81	0 0	0.0	0 0	010	010	100	010	010	0 0	0 0	100	010	0 0	010
Mean		0	.0	.0	.00333	.00667	.02000	.00333	.01333	0	.0	.05200	.00667	0	.01000
S04N															
	0A	0 0	0.0	0 0	010	010	100	0 0	010	0 0	010	1 000	100	0 0	010
	0C	0 0	0.0	0 0	0 0	010	010	0 0	0 0	0 0	0 0	010	0 0	0 0	010
	0E	0 0	0.0	0 0	0 0	010	010	0 0	0 0	0 0	010	010	100	0 0	0 0
	0G	0 0	0.0	0 0	0 0	010	010	0 0	0 0	0 0	0 0	0.0	010	0 0	0 0
	01	0 0	0.0	0 0	010	010	010	0 0	010	0 0	0 0	010	010	0 0	010
	4A	0 0	0.0	0 0	010	010	100	0 0	010	0 0	0 0	100	010	0 0	100
	4C	0 0	0.0	0 0	010	0.0	010	010	010	0 0	0 0	100	0 0	0 0	010
	4E	0 0	0.0	0 0	010	010	010	010	010	0 0	0 0	010	0 0	0 0	010
	4G	0 0	0.0	0 0	010	0 0	010	0 0	0 0	0 0	0 0	010	0 0	0 0	010
	41	0 0	0.0	0 0	010	010	010	010	010	0 0	0 0	010	0 0	0 0	010
	8A	0 0	0.0	0 0	0 0	0 0	010	0 0	010	0 0	0 0	010	0 0	0 0	010
	8C	0 0	0.0	0 0	010	010	100	0 0	010	0 0	0 0	010	010	0 0	010
	8E	0 0	0.0	0 0	010	010	010	0 0	010	0 0	0 0	010	010	0 0	1 000
	8G	0 0	0.0	0 0	010	100	010	100	010	0 0	0 0	010	010	0 0	2 000
	81	0 0	0.0	0 0	010	010	010	0 0	010	0 0	0 0	010	0 0	0 0	010
Mean		0	0	.0	.00733	.01333	.03200	.01533	.00733	0	.00267	.05733	.01000	0	.31333
S03															
	0A	0 0	0 0	0 0	010	010	100	010	010	0 0	010	100	010	0 0	010
	0C	0 0	0 0	0 0	010	010	010	010	010	0 0	010	100	010	0 0	010
	0E	0 0	0 0	0 0	010	010	010	010	010	0 0	0 0	010	010	0 0	010
	0G	0 0	0 0	0 0	010	010	100	010	010	0 0	010	100	100	0 0	010
	01	0 0	0 0	0 0	010	010	010	010	010	0 0	010	010	100	0 0	010
	4A	0 0	0 0	0 0	010	010	010	010	010	0 0	0 0	010	010	0 0	010
	4C	0 0	0 0	0 0	010	010	010	010	010	0 0	010	010	010	0 0	010
	4E	0 0	0 0	0 0	010	010	010	010	010	0 0	010	010	010	0 0	010
	4G	0 0	0 0	0 0	010	010	010	010	010	0 0	010	100	010	0 0	010
	41	0 0	0 0	0 0	010	010	010	010	010	0 0	010	100	010	0 0	010
	8A	0 0	0 0	0 0	010	010	010	010	010	0 0	010	100	010	0 0	010
	8C	0 0	0 0	0 0	010	010	010	010	010	0 0	010	100	010	0 0	010
	8E	0 0	0 0	0 0	010	100	010	010	010	0 0	010	100	010	0 0	010
	8G	0 0	0 0	0 0	010	010	010	010	010	0 0	010	010	010	0 0	010
	81	0 0	0 0	0 0	010	010	010	010	010	0 0	0 0	010	010	0 0	010
Mean		0	0	.0	.01000	.02200	.03200	.01000	.01000	0	.00733	.04600	.02200	0	.01000
S03															
	0A	0 0	0 0	0 0	0 0	010	100	010	0 0	0 0	0 0	0 0	010	0 0	010
	0C	0 0	0 0	0 0	010	010	010	0 0	010	0 0	0 0	010	010	0 0	010
	0E	0 0	0 0	0 0	0 0	010	010	0 0	100	0 0	100	0 0	0 0	0 0	0 0
	0G	0 0	0 0	0 0	010	010	010	0 0	100	0 0	010	100	010	0 0	010
	01	0 0	0 0	0 0	0 0	010	010	010	010	0 0	010	010	0 0	0 0	0 0
	4A	0 0	0 0	0 0	0 0	010	0 0	0 0	010	0 0	0 0	0 0	0 0	0 0	0 0
	4C	0 0	0 0	0 0	0 0	010	0 0	0 0	010	0 0	010	010	0 0	0 0	0 0
	4E	0 0	0 0	0 0	010	100	010	0 0	010	0 0	010	100	0 0	0 0	010
	4G	0 0	0 0	0 0	0 0	010	0 0	0 0	010	0 0	100	0 0	0 0	0 0	0 0
	41	0 0	0 0	0 0	0 0	100	010	0 0	010	0 0	0 0	100	0 0	0 0	010
	8A	0 0	0 0	0 0	0 0	010	0 0	0 0	010	0 0	0 0	0 0	010	0 0	010
	8C	0 0	0 0	0 0	0 0	0 0	010	0 0	010	0 0	0 0	010	0 0	0 0	0 0

Atmospheric Oil Sands Ecological Monitoring Program
August 1982 Survey of Bryophyte and Lichen Plant Communities
in Pinus Banksiana Reference Stands
Species Cover % Values By Sub m Plots

Stand	Plot	PELPUL	PELRUF	STEALP	BRYSPP	CETNAL	CETPIN	EVEMES	HYPPHY	PARELE	PARSUL	PARAMB	PARHYP	PLAGLA	USNSPP
	8E	0 0	0 0	0 0	0 0	0 0	.010	0 0	0.0	0 0	0.0	.010	0 0	0 0	0 0
	8E	0 0	0 0	0 0	0 0	0 0	.010	0 0	0 0	0.0	0 0	.100	.010	0 0	0 0 .010
	81	0 0	0 0	0 0	0 0	0 0	.010	0 0	.100	0.0	0 0	.010	.010	0 0	0 0
Mean		0	0	0	.00300	.00400	.03333	.00367	.03667	.0	.01000	.03733	.01733	0	.00667
804															
	8A	0 0	0 0	0.0	.010	.100	.100	.010	.010	0 0	0 0	.010	.010	0.0	.010
	8C	0 0	0 0	0 0	.010	.010	.010	.010	.010	0 0	.010	.010	.010	0 0	.010
	8E	0 0	0 0	0 0	.010	.010	.010	.010	0 .010	0 0	0 0	.010	.010	0 0	.010
	81	0 0	0 0	0 0	.010	.010	.010	.010	.010	0 0	.100	.010	.010	0 0	.010
	8A	0 0	0 0	0 0	.010	.100	.010	.010	.010	0 0	.010	.010	.010	0 0	.010
	8C	0 0	0 0	0 0	.010	.010	.010	.010	.010	0 0	.010	.010	.010	0 0	.010
	8E	0 0	0 0	0 0	.010	.010	.010	.010	.010	0 0	0 0	.010	.010	0 0	.010
	81	0 0	0 0	0 0	.010	.010	.010	.010	.100	0 0	.100	.010	.010	0 .010	.010
Mean		0	0	0	.01000	.02200	.01800	.01000	.02133	.0	.01200	.02200	.01000	.00667	.01000
805															
	8A	0 0	0 0	0 0	.010	.010	.100	.100	.100	0 0	0 .010	.010	.010	0 0	.010
	8C	0 0	0 0	0 0	.010	.100	.100	.010	.010	0 0	0 .010	.010	.010	0 0	.010
	8E	0 0	0 0	0 0	.010	.010	.100	.010	.010	0 0	.010	.010	.010	0 0	.010
	81	0 0	0 0	0 0	.010	.010	.100	.010	.010	0 0	.010	.010	.010	0 0	.010
	8A	0 0	0 0	0 0	.010	.010	.100	.010	.010	0 0	.010	.010	.010	0 0	.010
	8C	0 0	.100	0 0	.010	.010	.010	.010	.010	0 0	0 .010	.010	.010	0 0	.010
	8E	0 0	0 0	0 0	.010	.010	.100	.010	.010	0 0	0 .010	.010	.010	0 0	.010
	81	0 0	0 0	0 0	.010	.010	.100	.010	.010	0 0	0 .010	.010	.010	0 0	.010
	8A	0 0	0 0	0 0	.010	.010	.100	.010	.010	0 0	.010	.010	.010	0 0	.010
	8C	0 0	0 0	0 0	.010	.010	.100	.010	.010	0 0	.010	.010	.010	0 0	.010
	8E	0 0	0 0	0 0	.010	.010	.100	.010	.100	0 0	0 .010	.010	.010	0 0	.010
	81	0 0	0 0	0 0	.010	.010	.100	.010	.100	0 0	0 .010	.010	.010	0 0	.010
Mean		0	00667	0	.01000	.01000	.05200	.01000	.02000	0	.00667	.02000	.01000	0	.01000
807															
	8A	.010	.010	0 0	.010	1.000	.100	.010	2.000	0 0	.010	.100	.100	0 0	1.000
	8C	0 0	0 .010	0 0	.010	.010	.100	.010	.010	0 0	0 0	.100	.100	0 0	.100
	8E	0 0	0 0	0 0	.100	.100	.100	.010	.100	0 0	0 0	.100	.010	0 0	.010
	81	0 0	0 0	0 0	.010	.100	.100	.010	.100	0 0	0 0	.100	.010	0 0	.100
	8A	0 0	0 0	0 0	.010	.010	.100	.010	1.000	0 0	0 0	.100	.010	0 0	.010
	8C	0 0	0 0	0 .010	.010	.010	.100	.010	.100	0 0	0 0	.100	.010	0 0	.100
	8E	0 0	0 0	0 0	.010	.100	.100	.010	.100	0 0	0 0	.100	.010	0 0	.100
	81	0 0	0 0	0 0	.010	.100	.100	.010	1.000	0 0	0 0	.100	.010	0 0	.100
	8A	0 0	0 0	0 0	.010	.010	.100	.010	.100	0 0	0 0	.100	.010	0 0	.100
	8C	0 0	0 0	0 0	.010	.010	.100	.010	1.000	0 0	0 .010	.010	.010	0 0	.010
	8E	0 0	0 0	0 0	.010	.010	.100	.010	1.000	0 0	0 0	.100	.010	0 0	.010
	81	0 0	0 0	0 0	.010	.100	.010	.010	.010	0 0	0 0	.010	.100	0 0	.010
Mean		00667	.00133	00667	.01000	.10000	.05000	.00333	.27667	0	.00133	.11000	.05200	0	.11200
808															
	8A	0 0	0.0	0 0	.010	.010	.100	.010	.010	0 0	0 0	.100	.010	0 0	.010
	8C	0 0	0 0	0 0	.010	.010	.100	.010	.010	0 0	0 0	.100	.010	0 0	.010
	8E	0 0	0 .010	0 0	.010	.010	.100	.010	.010	0 0	0 0	.100	.010	0 0	.010
	81	0 0	0 0	0 0	.010	.010	.100	.010	.010	0 0	0 0	.100	.100	0 0	.010
	8A	0 0	0 0	0 0	.010	.010	.100	.010	.010	0 0	0 0	.100	.010	0 0	.010
	8C	0 0	0 0	0 0	.010	.010	.100	.010	.010	0 0	0 0	.100	.010	0 0	.010
	8E	0 0	0 0	0 0	.010	.010	.100	.010	.100	0 0	0 0	1.000	.010	0 0	.010
	81	0 0	0 0	0 0	.010	.010	.100	.010	.100	0 0	0 0	.100	.010	0 0	.010
	8A	0 0	0 0	0 0	.010	.010	.100	.010	.100	0 0	0 0	.100	.010	0 0	.010
	8C	0 0	0 0	0 0	.010	.010	.100	.010	.100	0 0	0 0	.100	.010	0 0	.010
	8E	0 0	0 0	0 0	.010	.010	.100	.010	.100	0 0	0 0	.100	.010	0 0	.010
	81	0 0	0 0	0 0	.010	.010	.100	.010	.100	0 0	0 0	.010	.010	0 0	.010
Mean		0	00667	0	.01000	.01000	.04800	.01000	.04000	0	0	.17733	.02133	0	.01000
809															
	8A	0 0	0 0	0 0	.010	.010	.100	.010	.100	0 0	0 0	.010	.100	0 0	.100
	8C	0 0	0 0	0 0	.010	.010	.100	.010	.100	0 0	0 .100	.010	1.000	0 0	1.000
	8E	0 0	0 0	0 0	.010	.010	.100	.010	.100	0 0	0 .010	.010	.100	0 0	.100
	81	0 0	0 0	0 0	.010	.010	.100	.010	.100	0 0	0 .010	.010	.100	0 0	.100
	8A	0 0	0 0	0 0	.010	.010	.100	.010	.100	0 0	0 .010	.010	.100	0 0	.100
	8C	0 0	0 0	0 0	.010	.010	.100	.010	.100	0 0	0 .010	.010	.100	0 0	.100
	8E	2.000	0 0	0 0	.010	.010	.100	.010	.100	0 0	0 .010	.010	.100	0 0	.100
	81	0 0	0 0	0 0	.010	.010	.010	.010	.100	0 0	0 .010	.010	.100	0 0	.100
	8A	0 0	0 0	0 0	.010	.010	.100	.010	.100	0 0	0 .010	.010	.010	0 0	.100
	8C	0 0	0 0	0 0	.100	.010	.010	.010	.100	0 0	0 .010	.010	.010	0 0	.100
	8E	0 0	0 0	0 0	.010	.010	.010	.010	.100	0 0	0 0	.100	.100	0 0	1.000
	81	0 0	0 0	0 0	.010	.010	.010	.010	.010	0 0	0 0	.010	.010	0 0	.010
Mean		13333	0	0	.01000	.01000	.05000	.03667	.06400	0	.01200	.03200	.05400	0	.30200
810															
	8A	0 0	0 0	0 0	.010	.010	.010	.010	.100	0 0	0 0	.010	.010	0 0	.010
	8C	0 0	0 0	0 0	.010	.010	.100	.010	.010	0 0	0 0	.100	.010	0 0	.010
	8E	0 0	0 0	0 0	.010	.010	.100	.010	.010	0 0	0 0	.100	.010	0 0	.100
	81	0 0	0 0	0 0	.010	1.000	.010	.100	1.000	0 0	0 0	.010	.010	0 0	1.000

Athabasca Oil Sands Ecological Monitoring Program
August 1993 Survey of Bryophyte and Lichen Plant Communities
in Pinus banksiana Reference Stands
Species Cover % Values By SHS m Plots

Stand	Plot	PELPUL	PELRUP	STEALP	BRYSPP	CETHAL	CETPIN	EVERMES	HYPPHY	PARELE	PARSUL	PARAMB	PARHYP	PLAELA	VERSPP
	4A	0 0	0.0	0 0	010	100	010	010	1.000	0 0	0.0	010	010	0 0	010
	4C	0 0	0 0	0 0	010	010	010	010	010	0 0	0 0	010	010	0 0	010
	4E	0 0	0 0	0 0	010	010	100	010	010	0 0	0 0	100	100	0 0	010
	4G	0 0	0 0	0 0	010	010	010	010	100	0 0	0 0	100	010	0 0	010
	41	0 0	0 0	0 0	010	010	010	010	010	0 0	0 0	010	010	0 0	010
	8A	0 0	0 0	0 0	010	010	1.000	010	100	0 0	0 0	100	010	0 0	010
	8C	0 0	0 0	0 0	010	010	010	010	100	0 0	0 0	100	010	0 0	010
	8E	0 0	0 0	0 0	010	010	010	010	100	0 0	0 0	100	010	0 0	010
	8G	0 0	0 0	0 0	010	010	010	010	100	0 0	0 0	010	010	0 0	010
	81	0 0	0 0	0 0	010	010	010	010	010	0 0	0 0	010	010	0 0	010
Mean		0	.0	0	.01000	.08800	.09400	.02200	.17800	.0	.0	04833	01800	.0	05300
S12															
	8A	0 0	0.0	0 0	010	010	010	010	100	0 0	0.0	010	010	0 0	100
	8C	0 0	0 0	1.000	010	010	010	010	010	0 0	010	010	010	0 0	010
	8E	0 0	0 0	0 0	010	010	010	010	010	0 0	0 0	010	010	0 0	010
	8G	0 0	0 0	0 0	010	010	010	010	100	0 0	010	010	010	0 0	100
	4A	0 0	0 0	0 0	010	010	010	010	010	0 0	010	010	010	0 0	1.000
	4C	0 0	0 0	0 0	010	010	010	010	100	0 0	0 0	010	010	0 0	010
	4E	0 0	0 0	0 0	010	010	010	010	010	0 0	010	010	010	0 0	100
	4G	0 0	0 0	0 0	010	010	010	010	010	0 0	0 0	100	010	0 0	010
	41	0 0	0 0	0 0	010	010	010	010	100	0 0	010	100	010	0 0	010
	8A	0 0	0 0	0 0	010	010	010	010	010	0 0	010	100	010	0 0	100
	8C	0 0	0 0	0 0	010	010	010	010	100	0 0	010	100	010	0 0	010
	8E	0 0	0 0	0 0	010	010	010	010	010	0 0	010	100	010	0 0	010
	8G	0 0	0 0	0 0	010	010	100	010	100	0 0	100	100	010	0 0	100
	81	1.000	0 0	0 0	010	0 0	010	010	010	0 0	0 0	010	010	0 0	010
Mean		00857	.0	00857	01000	.00833	01600	.01000	04000	.0	01300	.02300	.01800	.0	10500
S14															
	8A	0 0	0.0	0 0	010	010	010	010	010	0 0	010	010	010	0 0	100
	8C	0 0	0 0	0 0	010	010	010	010	100	0 0	010	010	010	0 0	010
	8E	0 0	0 0	0 0	010	010	100	010	010	0 0	010	100	010	0 0	010
	8G	0 0	0 0	0 0	010	010	010	010	010	0 0	010	010	010	0 0	010
	81	0 0	0 0	0 0	010	010	010	010	100	0 0	010	010	010	0 0	010
	4A	0 0	0 0	0 0	010	010	010	010	100	0 0	010	010	010	0 0	100
	4C	0 0	0 0	0 0	010	010	010	010	100	0 0	010	010	010	0 0	100
	4E	0 0	0 0	0 0	010	010	010	010	010	0 0	0 0	100	010	0 0	010
	4G	0 0	0 0	0 0	010	010	010	010	100	0 0	100	100	100	0 0	100
	41	0 0	0 0	0 0	010	010	010	010	010	0 0	010	100	010	0 0	100
	8A	0 0	0 0	0 0	010	010	010	010	010	0 0	010	100	010	0 0	100
	8C	0 0	0 0	0 0	010	010	100	010	100	0 0	010	100	100	0 0	100
	8E	0 0	0 0	0 0	010	010	010	010	100	0 0	010	100	010	0 0	100
	8G	0 0	0 0	0 0	010	010	010	010	100	0 0	010	100	010	0 0	100
	81	0 0	0 0	0 0	010	010	010	010	100	0 0	010	100	010	0 0	010
Mean		0	0	0	01000	01000	.02200	01000	06400	0	.02133	04600	02200	0	05400
S15															
	8A	0 0	0 0	0 0	010	010	100	0 010	100	0 0	0 0	100	0 0	0 0	010
	8C	0 0	0 0	0 0	010	100	0 0	100	100	0 0	0 0	0 0	0 0	0 0	010
	8E	0 0	1 000	0 0	010	100	0 0	010	100	0 0	0 0	010	010	0 0	010
	8G	0 0	0 0	010	010	100	0 0	100	100	0 0	0 0	100	010	0 0	010
	81	0 0	0 0	0 0	010	1 000	0 0	100	010	0 0	0 0	100	0 0	0 0	010
	4A	0 0	100	0 0	010	100	0 0	100	010	0 0	0 0	100	0 0	0 0	010
	4C	0 0	0 0	0 0	010	100	0 0	100	010	0 0	0 0	100	100	0 0	010
	4E	0 0	010	0 0	010	100	0 0	100	010	0 0	0 0	100	100	0 0	010
	4G	0 0	0 0	0 0	010	100	0 0	100	010	0 0	0 0	100	010	0 0	010
	41	0 0	0 0	0 0	010	100	0 0	100	010	0 0	0 0	100	010	0 0	010
	8A	0 0	0 0	0 0	010	100	0 0	100	010	0 0	010	100	100	0 0	010
Mean		0	.30857	01857	00857	03067	30300	00357	07833	0	.00133	05357	03133	0	00857
S16															
	8A	0 0	100	1 000	010	010	010	0 0	010	0 0	0 0	010	010	0 0	100
	8C	0 0	0 0	0 0	010	010	100	0 0	010	0 0	0 0	010	010	0 0	010
	8E	0 0	100	1 000	010	010	100	0 0	010	0 0	0 0	010	010	0 0	010
	8G	0 0	1 000	0 0	010	010	010	010	010	0 0	0 0	010	010	0 0	010
	81	0 0	010	010	010	010	100	0 0	100	0 0	0 0	010	010	0 0	010
	4A	0 0	100	100	010	010	100	0 0	100	0 0	0 0	010	010	0 0	010
	4C	0 0	1 000	0 0	010	010	100	0 0	100	0 0	0 0	010	010	0 0	010
	4E	0 0	100	0 0	010	010	010	0 0	100	0 0	0 0	010	010	0 0	010
	4G	0 0	100	010	010	010	100	0 0	010	0 0	0 0	010	010	0 0	010
	41	0 0	0 0	0 0	010	010	100	0 0	010	0 0	0 0	010	010	0 0	100
	8A	0 0	1 000	1 000	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	010
	8C	0 0	0 0	0 0	010	010	010	0 0	010	0 0	0 0	010	010	0 0	0 0
	8E	0 0	100	100	010	010	010	0 0	010	0 0	0 0	010	010	0 0	100
	8G	0 0	0 0	0 0	010	100	010	010	100	0 0	0 0	010	010	0 0	010
	81	0 0	0.0	010	010	010	100	0.0	100	0 0	0 0	010	010	0 0	100
Mean		0	.30857	.01833	00833	01833	05733	00133	03833	0	0	00833	00857	0	03833

Atmospheric Sciences Research Center
August 1982 Survey of Bryophyte and Lichen Plant Communities
in Pinus Ponderosa Reference Stands
Synthetic Cover & Biomass Variables By Sub m Plots

Stand	Plot	BRYOPHCV	BRYOPHBP	LCHTERCV	LCHTERBP	LCHEPICV	LCHEPIBP	LCHALLCV	LCHALLBP	TOTALCV	TOTALBP
501N											
	0A	3 010	3	51 230	11	.030	3	51 260	14	54.260	15
	0C	1 010	3	36 440	13	10 000	1	36 440	14	37 450	15
	0E	000	4	7 130	7	1.230	6	8 360	12	8.360	15
	0G	30 000	1	25 440	13	.010	1	25 450	14	25 450	15
	01	10 000	1	37 030	10	.010	1	37 040	11	47 040	12
	4A	1 000	1	4 440	10	130	4	4 570	14	4 570	15
	4C	4 000	1	33 360	12	.030	3	33 390	15	38 390	16
	4E	6 000	1	7 830	11	.030	3	7 860	14	13 850	15
	4G	100	1	1 170	8	.100	7	1 230	14	1 430	17
	41	30 000	1	10 550	14	110	3	10 550	14	40 600	17
	8A	15 010	3	31 230	9	.030	3	31 260	11	46 260	13
	8C	5 000	1	17 350	11	010	1	17 350	12	22 350	13
	8E	100	1	3 140	8	220	4	3 360	10	3 460	11
	8G	100	1	3 200	10	140	5	3 400	10	3.500	10
	81	000	1	34 730	12	030	3	34 760	14	35 760	16
Mean		7 03667	1 48	19 47384	10 83	.00033	3 93	20 20167	13 67	27 30684	14 67
502N											
	0A	000	1	83 510	9	260	8	83 770	17	83 770	18
	0C	100	1	75 430	10	350	4	75 780	18	76 480	18
	0E	110	2	66 530	12	1 160	6	67 690	21	68 190	24
	0G	100	2	83 530	11	270	6	83 800	20	84 800	22
	01	110	2	91 530	12	170	4	91 700	20	91 910	23
	4A	120	3	84 430	11	1 160	6	85 590	18	86 710	23
	4C	010	1	91 340	10	270	8	91 610	18	91 830	20
	4E	020	2	91 530	11	350	8	91 880	20	92 080	22
	4G	020	2	89 430	12	440	8	90 870	20	90 880	22
	41	3 110	4	88 530	11	270	8	88 790	20	89 880	24
	8A	130	4	72 440	12	170	4	72 610	21	72 780	25
	8C	010	2	80 360	11	170	4	80 530	18	81 530	21
	8E	130	4	80 510	11	280	4	80 790	18	81 980	22
	8G	200	3	81 530	11	270	8	81 800	20	82 100	23
	81	030	4	82 330	11	1 350	8	84 680	20	85 710	24
Mean		54667	2 67	85 10861	11 13	48300	5 60	35 84300	18 63	88 18038	22 00
503N											
	0A	000	1	8 450	13	150	8	8 600	18	15 600	20
	0C	000	1	4 230	9	250	7	4 480	18	7 480	17
	0E	000	1	10 410	8	180	7	10 590	18	11 570	17
	0G	000	1	5 440	10	070	7	5 510	17	85 510	16
	01	010	2	11 030	10	060	6	11 090	18	61 090	16
	4A	000	1	4 260	12	060	8	4 320	18	30 340	20
	4C	000	1	4 440	10	150	7	4 590	17	5 600	18
	4E	000	1	7 550	12	070	7	7 620	20	10 630	21
	4G	100	2	3 430	10	060	8	3 510	18	3 510	20
	41	000	1	16 430	10	250	7	16 680	17	22 680	18
	8A	000	1	10 510	10	130	4	10 740	14	12 740	15
	8C	000	1	1 470	12	150	7	1 620	18	3.600	20
	8E	000	1	7 440	10	070	7	7 510	17	10 510	16
	8G	30 000	1	4 480	12	150	7	4 630	18	26 630	20
	81	10 000	1	6 530	10	200	8	6 730	18	15 730	19
Mean		11 67000	1 13	7 16833	10 73	13333	6 73	7 31000	17 67	13 18300	18 00
504N											
	0A	110	.3	8 400	13	1 250	8	8 710	21	10 830	24
	0C	100	1	85 280	9	040	4	85 380	13	85 380	14
	0E	030	3	10 530	13	130	4	10 750	18	12 770	19
	0G	100	1	70 330	10	.030	3	70 380	13	70 480	14
	01	100	3	11 430	9	070	7	11 480	18	13 550	17
	4A	120	4	9 130	9	260	7	9 480	14	8 550	18
	4C	010	2	170	8	150	8	320	14	1 330	18
	4E	000	1	24 430	10	070	7	24 500	17	25 500	18
	4G	000	1	10 430	10	060	4	10 490	14	11 490	18
	41	110	2	10 330	10	080	8	10 410	18	10 520	20
	8A	300	4	39 050	11	050	5	39 100	16	40 600	20
	8C	010	1	000	4	1 150	8	1 200	12	1 210	13
	8E	220	4	6 030	7	070	7	6 100	14	6 250	16
	8G	000	3	13 140	11	2 200	8	15 400	20	16 400	22
	81	130	3	16 210	8	000	8	16 270	16	16 280	17
Mean		88000	2 27	23 96667	9 30	30667	6 30	23 48833	15 60	23 34231	17 67
505											
	0A	3 100	2	78 110	8	270	8	78 380	15	82 480	20
	0C	000	1	87 510	10	180	8	87 690	18	88 690	20
	0E	000	1	72 410	8	080	8	72 490	16	72 490	17
	0G	000	1	84 500	8	280	8	84 780	16	85 780	18
	01	000	1	87 410	8	180	8	87 590	16	88 590	18
	4A	000	1	27 220	8	080	8	27 300	17	31 300	19
	4C	000	1	85 430	11	080	8	85 510	20	85 510	21
	4E	000	1	33 310	8	080	8	33 390	17	34 390	19
	4G	000	1	14 100	11	270	8	14 430	20	15 430	21
	41	000	1	8 240	8	080	8	8 320	16	10 330	18
	8A	000	1	14 320	12	180	8	14 710	21	19 710	22
	8C	000	1	39 430	11	080	8	39 520	20	47 530	21
	8E	010	2	11 310	8	080	8	11 780	17	13 770	19
	8G	000	1	4 430	10	080	8	4 520	18	8 520	20
	81	000	1	8 140	8	080	8	8 230	17	11 230	18
Mean		3 00733	1 13	38 67031	9 80	17133	8 73	48 04864	18 33	43 08387	19 67
506											
	0A	10 110	4	240	8	160	8	380	11	15 480	15
	0C	1 220	5	31 030	6	070	7	31 090	11	33 210	15
	0E	4 010	3	44 150	8	230	4	44 370	12	46 380	15
	0G	1 210	4	80 230	8	280	8	80 500	14	81 700	15
	01	010	2	70 200	8	160	8	70 400	14	70 410	15
	4A	030	3	10 010	3	010	1	10 030	4	10 040	4
	4C	100	2	10 070	8	230	6	10 300	13	11 400	15
	4E	200	3	70 130	6	200	8	70 330	13	71 500	15
	4G	100	3	10 100	7	130	3	10 270	10	10 410	15
	41	110	3	85 250	8	230	8	85 480	13	85 890	15
	8A	130	3	85 230	8	140	8	85 370	11	85 480	14
	8C	110	3	75 340	8	030	3	75 370	11	75 480	14

Athabasca Oil Sands Geological Monitoring Program
August 1982 Survey of Bryophyte and Lichen Plant Communities
in Pinus Banksiana Reference Stands
Synthetic Cover & Richness Variables by Sub m Plots

Stand	Plot	BRYOPHCV	BRYOPHRP	LCHTERCV	LCHTERRP	LCHEPICV	LCHEPIRP	LCHALLCV	LCHALLRP	TOTALCV	TOTALRP
	8E	.110	2	85.070	8	.020	2	85.090	11	86.200	13
	8G	.130	4	2.130	5	.130	4	2.260	9	2.390	13
	81	.210	3	45.000	9	.130	4	45.210	13	45.420	16
Mean		1.78733	3.07	41.62331	8.67	.14800	4.50	41.87130	11.27	43.35863	14.33
S04											
	9A	8.000	3	32.300	11	.200	6	32.520	18	38.520	22
	9C	7.000	2	43.130	6	.080	5	43.210	13	80.210	17
	9E	7.100	2	30.100	15	.080	5	30.270	24	37.370	26
	9G	6.100	2	55.300	14	.100	7	55.540	21	64.840	23
	91	15.100	2	71.270	14	.080	5	71.380	33	86.480	25
	4A	1.100	2	46.330	10	.180	5	46.510	15	47.610	21
	4C	.110	2	42.140	11	.080	5	42.230	20	42.340	22
	4E	1.100	2	25.140	10	.080	5	25.230	16	26.330	20
	4G	1.100	2	31.440	13	.080	5	31.530	21	32.630	23
	41	1.010	2	33.320	8	.100	5	33.500	16	34.610	20
	8A	5.100	3	67.550	13	.030	5	67.630	21	72.730	23
	8C	1.010	2	76.310	6	.080	5	76.390	16	78.400	18
	8E	1.010	3	34.300	13	.100	5	34.540	22	35.550	24
	8G	.210	3	1.200	6	.100	5	1.430	17	1.640	20
	81	1.010	2	.100	6	.200	10	.430	18	1.440	18
Mean		3.88400	2.13	38.87986	10.73	.14000	6.80	39.01986	19.33	42.92384	21.47
S05											
	0A	.110	2	86.740	13	.380	9	87.100	22	87.210	24
	0C	.210	3	78.480	13	.280	6	78.710	21	78.820	24
	0E	.100	1	78.430	5	.080	5	78.510	16	78.610	18
	0G	1.030	4	80.640	12	.180	5	80.720	21	81.750	25
	01	0.0	0	83.850	14	.180	5	83.830	23	83.630	23
	4A	.020	2	84.370	13	.180	5	84.550	22	84.570	24
	4C	.120	3	43.510	8	.080	5	43.590	17	43.610	20
	4E	.130	4	38.640	12	.180	5	38.720	21	38.850	25
	4G	.130	3	78.300	7	.170	5	78.470	15	78.590	18
	41	.130	3	74.420	8	.280	6	74.520	17	74.690	20
	8A	.010	1	85.540	12	.180	5	85.720	21	85.730	22
	8C	.010	1	72.640	12	.270	5	72.810	21	72.820	22
	8E	.110	2	67.640	11	.270	5	67.810	20	67.830	23
	8G	.030	2	83.700	15	.170	5	83.930	23	83.900	28
	81	.110	2	78.640	13	.380	9	78.890	22	78.910	24
Mean		.14867	2.27	69.83727	11.80	.31267	6.87	70.14893	20.27	70.29860	22.83
S07											
	0A	.030	3	48.380	13	4.330	9	53.680	21	53.730	24
	0C	1.310	5	52.330	11	.350	6	52.680	18	53.990	24
	0E	.150	5	27.450	13	.440	6	27.890	20	28.040	25
	0G	.310	3	58.370	13	.280	6	58.650	20	58.760	23
	01	1.100	1	58.430	5	.440	6	58.880	17	58.980	18
	4A	1.200	3	71.510	13	.170	5	71.680	18	72.880	18
	4C	1.320	6	26.530	11	1.280	6	28.788	18	31.100	25
	4E	1.110	3	71.530	12	.170	5	71.700	20	72.810	23
	4G	1.000	1	88.280	11	.520	6	88.780	19	89.780	20
	41	1.000	1	78.530	12	.438	7	78.888	19	80.388	30
	8A	1.420	7	34.280	11	1.340	6	35.580	18	37.010	25
	8C	1.310	5	66.350	11	.380	6	66.710	20	70.020	25
	8E	1.010	3	76.630	9	1.340	6	78.870	17	77.880	19
	8G	.200	3	33.230	8	1.070	6	34.300	17	34.500	19
	81	.110	2	80.430	10	.380	6	80.880	16	80.600	20
Mean		.78833	3.33	58.18786	10.87	.64833	6.07	57.84727	18.73	57.81280	22.07
S08											
	0A	0.0	0	82.830	13	.350	8	83.080	21	83.080	21
	0C	.100	1	84.830	13	.350	8	84.780	21	84.880	22
	0E	.100	1	84.030	15	.080	5	84.100	24	84.200	25
	0G	.100	1	80.740	16	.170	5	80.910	24	81.010	25
	01	.110	2	76.880	13	.280	6	76.910	21	77.020	23
	4A	.010	1	88.630	12	.080	5	88.710	20	88.820	21
	4C	.100	1	74.340	11	.180	7	74.500	18	74.680	18
	4E	0.0	0	87.850	13	1.150	8	88.710	21	88.710	21
	4G	1.000	1	86.840	12	1.340	8	87.880	20	88.880	21
	41	.100	1	82.460	13	.170	5	82.630	21	82.730	22
	8A	.010	1	86.420	10	.350	6	86.770	16	86.780	16
	8C	.010	1	81.820	11	.350	6	81.870	18	81.880	20
	8E	.100	1	77.640	12	.080	5	77.830	20	77.720	21
	8G	.100	1	91.850	12	.080	5	91.830	20	91.730	21
	81	.100	1	78.420	10	.180	7	78.880	17	78.880	18
Mean		.13833	.83	73.71627	12.47	.33667	7.87	74.04882	20.33	74.17625	21.27
S09											
	0A	18.210	5	11.040	6	.440	8	11.480	14	29.690	20
	0C	16.120	6	62.340	9	2.340	8	64.680	18	83.800	26
	0E	6.300	6	78.240	9	.480	8	78.720	18	84.890	23
	0G	7.220	5	75.430	9	.380	8	75.780	18	83.010	23
	01	.020	2	72.250	8	.250	7	72.500	16	72.520	16
	4A	88.100	5	3.030	4	.270	8	3.300	13	88.400	16
	4C	3.110	3	43.220	7	.480	8	43.870	16	46.780	18
	4E	8.310	8	34.220	7	.480	8	34.870	16	43.680	23
	4G	35.310	6	38.420	8	.170	5	38.590	17	83.900	23
	41	31.200	5	63.410	8	.380	8	63.770	17	94.970	23
	8A	88.210	8	32.140	8	.180	8	32.320	17	87.530	23
	8C	3.310	8	80.180	10	.270	8	80.430	18	83.740	26
	8E	6.310	7	87.880	12	1.330	7	88.880	18	84.180	26
	8G	4.130	5	81.360	10	.080	8	81.430	18	85.560	23
	81	1.300	4	88.330	9	.080	8	88.410	17	90.710	21
Mean		19.08333	5.80	84.74133	8.60	.49867	8.67	85.23000	16.67	74.30327	21.87
S10											
	0A	1.000	1	70.410	10	.170	8	70.580	18	71.580	19
	0C	3.000	3	83.320	12	.170	8	83.490	20	86.490	23
	0E	3.110	4	83.340	13	.170	8	83.510	21	86.620	25
	0G	3.100	3	78.630	11	.820	8	80.240	18	83.340	22
	01	3.100	4	83.220	7	3.140	8	86.380	15	89.480	19

Athabasca Oil Sands Ecological Monitoring Program
August 1993 Survey of Bryophyte and Lichen Plant Communities
in Pinus Banksiana Reference Stands
Synthetic Cover & Richness Variables By 5x5 m Plots

Stand	Plot	BRYOPHCV	BRYOPHRP	LCHTERCV	LCHTERRP	LCHEPICV	LCHEPIRP	LCHALLCV	LCHALLRP	TOTALCV	TOTALRP
	4A	2.100	2	78.330	11	1.180	4	80.480	19	82.580	31
	4C	1.100	3	74.330	8	.080	4	74.400	17	76.500	18
	4E	1.100	2	84.270	15	.250	4	84.520	23	85.720	35
	4G	3.000	2	84.330	10	.250	4	84.580	18	87.580	30
	4I	1.130	5	78.430	10	.080	4	78.510	18	79.640	33
	8A	4.130	5	76.140	10	1.250	4	77.390	18	81.510	33
	8C	1.110	3	80.530	13	.250	4	80.780	20	81.800	33
	8E	5.000	2	86.230	8	.170	4	86.380	17	74.380	18
	8G	1.100	3	78.530	13	.070	3	78.600	18	80.700	31
	8I	1.200	3	82.730	12	.080	4	82.810	20	84.010	33
Mean		3.38467	3.67	78.78262	10.67	.83933	7.83	78.31798	18.80	79.80261	31.67
312											
	0A	8.200	4	44.230	6	.200	4	44.880	18	52.780	30
	0C	14.010	5	75.330	8	.080	4	75.310	17	89.320	22
	0E	7.100	3	12.320	6	.080	4	12.400	18	19.500	18
	0G	20.100	4	56.240	10	.270	8	56.510	18	76.610	33
	0I	8.110	4	28.230	8	1.080	8	28.310	18	36.420	22
	4A	1.200	3	45.400	8	.080	4	45.480	18	46.880	18
	4C	8.100	4	17.520	11	.270	8	17.800	20	26.000	24
	4E	1.010	3	12.320	8	.080	4	12.410	17	13.420	18
	4G	4.000	3	33.240	10	.170	8	33.410	18	37.410	31
	4I	9.100	3	38.520	8	.280	8	38.800	18	47.880	31
	8A	2.200	3	43.520	10	.080	8	43.610	19	45.810	32
	8C	8.110	5	78.520	12	.080	8	78.710	21	86.820	34
	8E	2.130	4	74.430	10	.080	8	74.520	18	76.640	23
	8G	1.100	2	86.330	10	.540	8	86.670	18	87.970	31
	8I	.210	3	21.310	8	.070	7	21.380	18	21.580	18
Mean		5.91133	3.67	44.84683	9.60	.26133	8.83	44.68508	17.83	50.78736	31.60
314											
	0A	1.020	3	3.280	12	.180	8	3.480	21	4.460	34
	0C	.100	1	1.170	8	.180	8	1.360	16	1.460	18
	0E	.100	1	2.280	8	.270	8	2.520	17	2.620	18
	0G	.120	3	3.440	10	.080	8	3.530	18	3.650	22
	0I	1.010	2	4.440	11	.180	8	4.620	20	5.630	32
	4A	.220	4	3.430	10	.270	8	3.700	18	3.930	23
	4C	.230	8	3.280	11	.350	8	3.620	20	3.850	36
	4E	3.120	6	4.480	11	.170	8	4.630	18	7.740	25
	4G	1.210	4	3.230	8	.450	8	3.670	18	4.880	19
	4I	1.210	4	4.370	14	.270	8	4.640	33	5.880	37
	8A	2.200	3	.180	8	.270	8	.450	18	2.650	21
	8C	8.100	4	1.440	8	.540	8	1.980	18	7.080	22
	8E	3.200	4	8.230	8	.350	8	8.580	18	12.780	22
	8G	6.020	6	1.430	8	.350	8	1.780	17	7.810	22
	8I	4.400	8	8.410	7	.080	8	8.500	18	10.900	21
Mean		1.85867	3.80	3.48800	9.60	.28833	8.83	3.73633	18.83	5.88800	23.13
315											
	0A	6.040	5	.430	7	.340	7.7	.770	14	6.810	28
	0C	24.100	4	1.130	8	.230	8	1.360	10	25.460	14
	0E	1.130	4	4.330	8	.250	8	4.580	18	5.710	29
	0G	8.130	6	4.240	8	.340	7	4.580	18	12.700	31
	0I	8.210	6	37.340	10	1.140	8	38.480	18	46.780	32
	4A	5.140	7	3.530	8	.530	7	4.040	18	9.180	33
	4C	2.210	4	6.420	8	.530	8	6.950	19	9.160	30
	4E	5.140	7	12.340	10	.340	7	12.880	17	17.820	24
	4G	.220	4	7.240	7	.250	8	7.500	18	7.720	19
	4I	.220	4	30.340	10	.220	8	30.470	18	30.690	19
	8A	4.040	7	12.290	13	.150	8	12.410	18	16.450	28
	8C	5.310	8	7.340	8	1.000	1	8.340	10	13.650	16
	8E	4.020	4	10.230	8	.250	7	10.480	18	14.500	28
	8G	8.130	6	10.360	11	.350	8	10.690	18	18.810	24
	8I	8.110	8	8.270	11	.250	8	8.530	18	13.640	24
Mean		5.74800	5.27	10.27733	9.00	.41333	8.83	10.78133	15.83	16.53933	20.60
318											
	0A	5.330	6	3.280	11	.180	7	3.510	18	8.840	28
	0C	65.210	7	2.280	10	.180	7	2.510	17	67.720	24
	0E	33.300	6	3.430	8	.180	7	3.580	18	36.880	22
	0G	65.240	6	8.040	7	.080	6	8.120	18	73.280	22
	0I	12.100	4	5.290	11	.250	7	5.510	18	17.610	22
	4A	80.130	6	.840	10	.150	7	.800	17	80.930	23
	4C	80.020	6	3.030	8	.240	6	3.280	11	83.280	16
	4E	55.300	6	2.230	8	.070	7	2.290	13	57.590	18
	4G	51.100	4	.280	8	.250	7	.530	18	51.710	30
	4I	71.200	6	.150	7	.180	7	.330	14	71.530	19
	8A	41.100	4	8.230	10	0 0	0	8.220	10	49.320	14
	8C	55.300	6	1.080	8	.180	7	1.310	13	56.610	18
	8E	75.230	7	4.420	8	.070	7	4.480	18	79.730	22
	8G	23.100	4	1.340	8	.440	8	1.780	18	24.880	30
	8I	6.300	8	1.430	8	.340	7	1.770	18	10.070	31
Mean		47.83885	5.88	2.88800	8.33	.18000	8.86	3.08800	14.83	80.88884	20.83

Athabasca Oil Sands Ecological Monitoring Program
August 1992 Survey of Bryophyte and Lichen Plant Communities
in Pinus Banksiana Reference Stands
Species Cover % Values per 5x5 m Plot By Stand

Stand	AULPAL	BRASAL	CERPUR	DICPOL	DICSCO	DITPLE	DREUNC	EURPUL	HYLSPL	ORTPLA	PLESCH	PONNUT	POLJUN	POLPIL	PTICIL	PTIPUL
S01N Mean	.0	.0	.0	.00067	0	.0	.0	.0	.00067	.0	.00067	.0	.00200	7.0267	.0	0
S02N Mean	.0	.0	.0	.08533	.0	.0	.0	.0	.01467	.0	.00133	.0	.43533	.00733	.0	.00200
S03N Mean	0	.0	.0	.0	.0	.0	0	.0	.0	.0	0	.0	.00733	11.887	.0	.0
S04N Mean	.0	.0	.0	.01733	.0	.0	0	.0	.00067	.0	.00733	.0	.34800	.80733	0	.00733
S02 Mean	.0	.0	.0	.00067	.0	.0	0	.0	.0	.0	.0	.0	.00867	2.8000	.0	.0
S03 Mean	.0	.00067	.00867	.30833	.0	.0	0	.0	.02200	.0	1.4280	.00067	.00267	.00800	.00733	.0
S04 Mean	.0	.0	.13333	.00867	0	.0	.0	.0	.00067	.0	.07400	.0	.38200	3.0073	.0	0
S05 Mean	.0	.00067	.0	.02400	.00067	.0	0	.0	.0	.0	.00133	.0	.01300	.10867	.0	.00067
S07 Mean	.0	.0	.02867	.03733	.00067	.0	.0	.0	.00133	.0	.08800	.0	.24800	.34800	0	.00800
S08 Mean	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.00133	.12800	.0	.0
S09 Mean	.0	.0	.00867	.33067	.00867	.0	.0	.0	3.2147	.01400	14.887	.0	.17000	.0	.0	.10200
S10 Mean	.0	0	.0	.88333	.0	.0	.0	.0	.00800	.0	1.0867	.0	.00067	.14867	.0	.00133
S12 Mean	0	.0	.0	1.8400	.00800	.0	0	.0	.38400	.0	3.0733	.0	.80133	.01400	.0	.03067
S14 Mean	0	.0	.00133	.23533	.44133	.0	.0	.0	.00867	.0	.93333	0	.31467	.00933	.0	.00867
S15 Mean	.0	.00133	.05733	.01800	.00867	.0	.0	.00133	3.2020	.0	3.0867	.0	.01133	0	.0	.04200
S16 Mean	.0	.00067	.00867	.05733	.00333	.0	.0	.0	12.407	.0	33.733	.00133	.57833	.0	.0	.02800

Athabasca Oil Sands Ecological Monitoring Program
August 1982 Survey of Bryophyte and Lichen Plant Communities
in Pinus banksiana Reference Stands
Species Cover % Values per 5x5 m Plot by Stand

Stand	PTICC	SPLSPP	TETANG	TOMNIT	CETCUC	CETERI	CETNIV	CLAMIT	CLARAM	CLASTE	CLAAMA	CLACAP	CLACAR	CLACEN	CLACHL	CLACOC
S01N Mean	0	0	0	.0	0	.03667	0	14.813	.0	.00667	.00133	0	.0	.00667	.01067	.37000
S02N Mean	.00667	0	0	0	.0	.05800	.01000	77.000	.02000	.80733	.01300	.0	0	.00667	.03133	.0
S03N Mean	0	0	0	0	0	.18267	.00667	3.1333	0	.0	0	.00667	.0	.00133	.00333	.06600
S04N Mean	0	0	0	0	0	.03533	0	15.341	.0	.00667	0	.0	.00667	.00667	.06533	.03333
S01 Mean	0	.0	0	0	.0	.14600	0	30.467	0	.00667	.00667	0	0	.00667	.07467	.33600
S02 Mean	0	0	0	.0	0	.00667	.00133	46.867	.00667	.10333	0	.00667	0	.00467	.01400	0
S04 Mean	0	0	0	.0	0	.30200	.00667	38.067	0	.00667	0	.00333	0	.00400	.01933	.15133
S05 Mean	0	0	.00667	0	.0	.14667	.00267	85.000	.00133	.37533	0	.00133	0	.00333	.02066	.00200
S07 Mean	.00667	.00667	0	0	0	.01733	.00200	52.000	0	.00067	0	0	0	.00533	.00600	.00267
S08 Mean	0	0	.0	0	.0	.21400	.03467	70.333	.00133	.44200	0	.00133	0	.00400	.11533	.03667
S09 Mean	.26133	0	.0	.0	0	.08400	0	50.600	0	.15333	.0	.0	0	.0	.02667	.00200
S10 Mean	.06800	.0	0	0	0	.45400	.02933	70.333	.00267	1.6133	.00667	.00667	0	.00133	.02400	.00067
S12 Mean	0	.0	.0	0	0	.05533	0	39.533	.00667	.03533	.03133	0	0	.00133	.06733	.01667
S14 Mean	0	0	0	0	0	.00667	.0	48.200	0	0	.00667	.00133	0	0	.03200	.02267
S15 Mean	.30600	.00667	0	.00667	0	.00667	.00133	8.0747	0	.00133	0	0	0	.01200	.14200	.00600
S16 Mean	.70600	0	0	0	0	.00667	.0	1.3213	0	.00667	0	0	0	.00467	.01333	.00667

Athabasca Oil Sands Ecological Monitoring Program
August 1982 Survey of Bryophyte and Lichen Plant Communities
in Pinus Banksiana Reference Stands
Species Cover % Values per 5x5 m Plot by Stand

Stand	Plot	CLACON	CLACOR	CLACRP	CLACRT	CLAGON	CLAGRA	CLAMUL	CLAPHY	CLAPYX	CLASBU	CLASUB	CLAUNC	CLAVER	LECSRA	PELAPH	PELMAL
S01N																	
Mean	.0		.44067	0	.58800	.00200	.39867	.03867	1.0213	.02733	0	.00267	.06800	.00200	.18467	.07400	1.8140
S02N																	
Mean	.0		.40000	0	.00200	.04267	.38800	.02933	.06200	.0	.0	.0	4.2800	.00067	.0	.01333	1.6933
S03N																	
Mean	.0		.27467	0	.02600	.00200	.32933	.06267	.46000	.00467	.0	.00067	.03267	.00267	.00200	.02467	3.8333
S04N																	
Mean	.0		.82200	.00200	.00333	.00467	1.9513	.03267	.52000	.00133	.0	.0	2.4673	.0	.0	.0	1.1467
S02																	
Mean	.0		1.4133	.0	.00533	.01067	3.8000	.05067	.17467	.00400	.0	.0	3.0267	.0	.0	.0	.38867
S03																	
Mean	.00133		.00467	.0	.00733	.00333	.01833	.03000	.00133	.0	.0	.0	.00067	.0	.0	.07333	.35400
S04																	
Mean	.00067		.44000	.00133	.57400	.00533	.43633	.28133	1.1467	.00133	.0	.0	.00833	.00200	.0	.0	1.2140
S05																	
Mean	.0		.15333	.0	.00867	.02833	.06800	.48400	.13467	.0	.0	.0	.08200	.0	.0	.00867	2.4733
S07																	
Mean	.0		.71333	.00067	.01533	.02533	.21400	.48000	.16867	.00067	.0	.0	.0	.0	.0	.15333	2.3400
S08																	
Mean	.0		.21333	.00067	.05133	.03267	.20733	.74067	.17400	.00133	.0	.00067	.31400	.00067	.0	.0	.81333
S09																	
Mean	.00067		.19800	.00067	.00867	.01867	.05800	.05133	.00333	.0	.0	.0	.00133	.0	.0	.38000	2.9333
S10																	
Mean	.0		.84733	.00067	.00333	.00333	.48867	.09467	.08533	.00067	.00067	.0	.43800	.0	.0	.00067	1.8133
S12																	
Mean	.0		.78867	.0	.01000	.00400	1.4300	.07333	.08533	.00067	.0	.0	.0	.0	.0	.00867	2.4133
S14																	
Mean	.00867		.38933	.0	.01933	.00333	.24833	.18333	.23533	.0	.0	.0	.32800	.00200	.0	.03867	1.8733
S15																	
Mean	.0		.51400	.0	.00333	.00533	.05000	.33400	.04267	.0	.0	.00067	.00067	.00067	.0	.43800	.83333
S16																	
Mean	.0		.23000	.0	.00400	.00533	.05800	.12867	.00933	.0	.0	.0	.0	.0	.0	.58800	.08733

Atmospheric Oil Sands Ecological Monitoring Program
August 1983 Survey of Bryophyte and Lichen Plant Communities
in Pinus Banksiana Reference Stands
Species Cover % Values per Sub = Plot By Stand

Stand	PELAUP	STEALP	BRYSPP	CETHAL	CETPIN	EVEMES	HYPPHY	PARGLE	PARSUL	PARAMB	PARHYP	PLAGLA	USNSPP
S01N Mean	.00300	.00133	.00667	.00133	.05000	.00667	.06733	0	.00800	.01133	.00267	0	.00933
S02N Mean	0	0	.01500	.20500	.01000	.01500	.05200	0	.01000	.01500	.01000	0	.13000
S03N Mean	0	0	.00033	.00667	.03000	.00333	.01333	0	0	.05200	.00667	0	.01000
S04N Mean	0	0	.00733	.01333	.02200	.01533	.00733	0	.00267	.05733	.01600	0	.21333
S01 Mean	0	0	.01000	.02200	.03000	.01000	.01000	0	.00733	.04600	.02200	0	.01000
S03 Mean	0	0	.00200	.00400	.03333	.00267	.02667	0	.01000	.03733	.01733	0	.00467
S04 Mean	0	0	.01000	.02200	.01000	.01000	.02133	0	.01200	.02200	.01000	.00667	.01000
S05 Mean	.00667	0	.01000	.01000	.00200	.01000	.03000	0	.00067	.03400	.01000	0	.01000
S07 Mean	.00133	.00067	.01000	.18000	.00800	.00033	.37867	0	.00133	.11000	.00200	0	.11200
S08 Mean	.00067	0	.41000	.01000	.04000	.01000	.04000	0	0	.17733	.02133	0	.01000
S09 Mean	0	0	.01000	.01000	.05600	.03067	.08400	0	.01200	.02200	.00400	0	.20200
S10 Mean	0	0	.01000	.00800	.00400	.02200	.17600	0	0	.04833	.01000	0	.00200
S12 Mean	0	.00067	.01000	.00033	.01000	.01000	.04000	0	.01200	.02200	.01000	0	.10000
S14 Mean	0	0	.01000	.01000	.03200	.01000	.00400	0	.02133	.04600	.02200	0	.00400
S15 Mean	.35667	.01467	.00867	.03067	.20200	.00267	.07533	0	.00133	.00267	.02133	0	.00067
S16 Mean	.34067	.21933	.00033	.01533	.00733	.00733	.03933	0	0	.00033	.00867	0	.03933

Athabasca Oil Sands Ecological Monitoring Program
August 1993 Survey of Bryophyte and Lichen Plant Communities
in Pinus Banksiana Reference Stands
Synthetic Cover & Richness Variables by Sub-n Plots by Stand

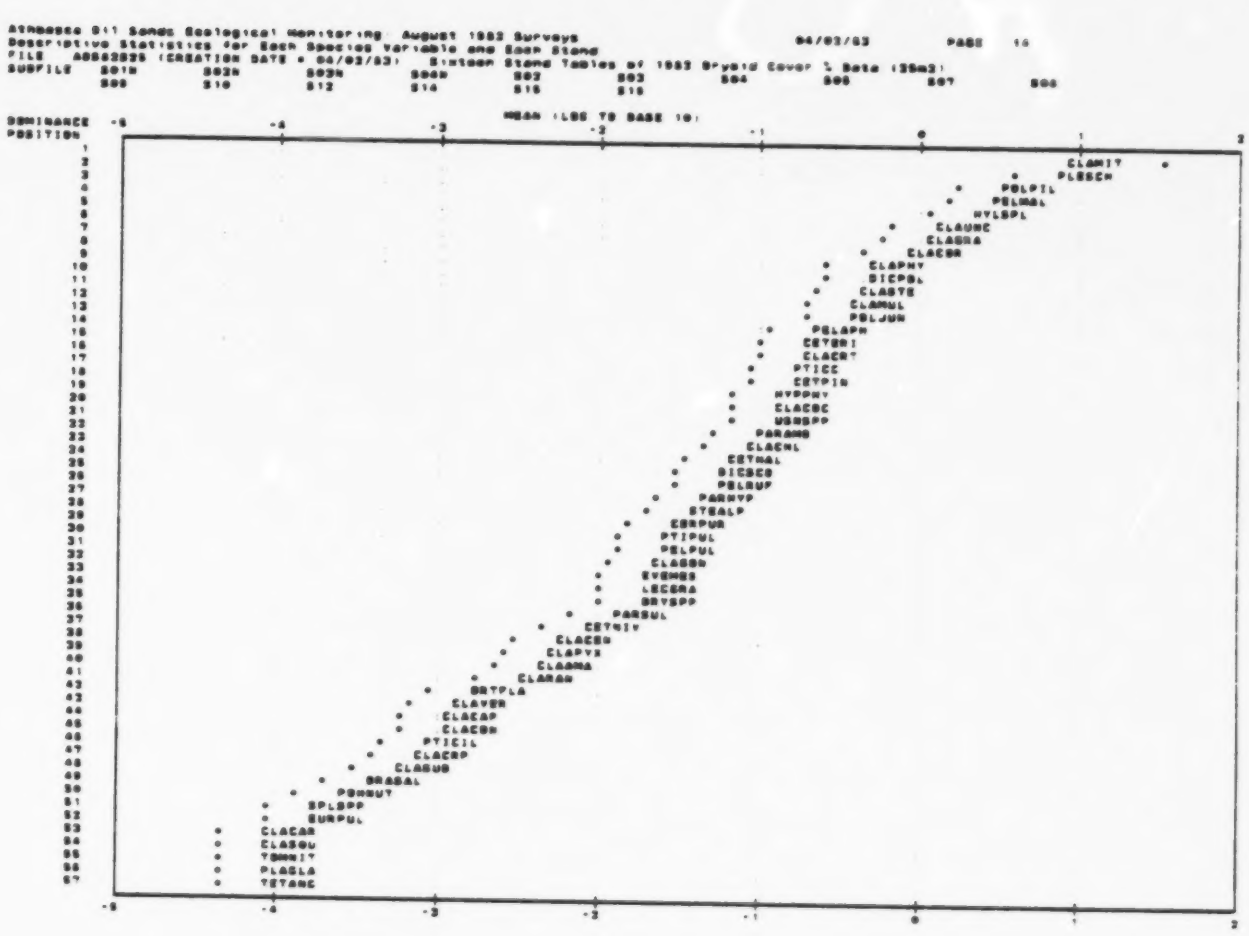
Stand	BRYOPHCV	BRYOPHRP	LCHTOSCV	LCHTOSRP	LCHEPICV	LCHEPIRP	LCHALLCV	LCHALLRP	TOTALCV	TOTALRP
S01N Mean	7.02667	1.00	10.47304	10.00	00033	2.00	20.38187	13.47	37.30004	16.67
S02N Mean	04667	2.67	05.10001	11.13	40300	0.40	05.04300	10.00	00.10035	22.00
S03N Mean	11.07400	1.13	7.10033	10.73	13333	0.73	7.31000	17.47	10.10300	10.00
S04N Mean	.00000	2.27	23.00005	0.20	.30007	0.20	23.40533	10.40	23.34331	12.07
S02 Mean	2.00733	1.13	30.07031	0.00	17133	0.73	40.04004	10.33	43.05307	10.47
S03 Mean	1.70733	3.07	41.42331	0.07	10000	0.00	41.07130	11.27	43.30003	14.33
S04 Mean	3.00000	2.13	30.07005	10.73	10000	0.00	30.01005	10.33	43.42304	21.47
S05 Mean	10007	2.27	09.03727	11.00	.21307	0.07	70.10003	20.27	70.20000	22.03
S07 Mean	70033	3.33	00.10700	10.07	04033	0.07	07.04727	10.73	07.01300	22.07
S08 Mean	10033	.03	73.71027	13.47	33007	7.07	74.04002	20.33	74.17020	21.27
S09 Mean	10.00333	5.00	04.74130	0.00	40007	0.47	00.33000	10.07	74.30327	21.07
S10 Mean	2.20407	2.07	75.70303	10.07	03033	7.03	70.31705	10.00	70.00301	21.07
S13 Mean	0.01133	2.47	40.04403	0.40	24133	0.53	44.00000	17.03	00.70725	21.40
S14 Mean	1.00007	3.00	3.40000	0.00	20033	0.02	3.73033	14.03	0.00000	22.13
S15 Mean	0.74000	0.27	10.37705	0.00	01333	0.03	10.70132	10.03	10.03033	20.00
S16 Mean	47.03003	0.00	3.00000	0.33	10000	0.00	3.00000	14.03	00.00004	20.03

ATHOSSA Oil Sands Geological Monitoring August 1982 Surveys 04/03/83 PAGE 13
Descriptive Statistics for Each Species Variable and Each Stand
FILE ...A0583025 (CREATION DATE = 04/03/83) Sixteen Stand Tables of 1982 Bryoria Cover % Data (25m2)
SUBFILE S015 S029 S034 S042 S053 S064 S068 S07 S08
S09 S10 S13 S14 S15 S16

LABEL	VARIABLE	N	PRES %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Autocaulon pallidus	AULPAL	240	0 0	0 0	0 0	0 0	0 0	+0 0	+0 0
Bryoerythrophyllum subrecurvirostre	BRYSUB	240	3 05	0 0002	0 001	0 000	0 443	+0 0	0 01
Caloplaca borbonica	CALBOR	240	4 07	0 0042	0 005	0 000	0 1.9	+0 0	0 05
Cetraria canadensis	CETCAN	240	1 00	0 0000	0 000	0 000	0 000	+0 0	0 00
Cetraria ciliaris	CETCIL	240	0 0	0 0	0 0	0 0	0 0	+0 0	0 0
Cetraria commixta	CETCOM	240	0 0	0 0	0 0	0 0	0 0	+0 0	0 0
Cetraria cucullata	CETCUC	240	0 0	0 0	0 0	0 0	0 0	+0 0	0 0
Cetraria ericetorum	CETERI	240	99 42	0 1050	0 264	0 016	0 150	+0 0	0 00
Cetraria muricata	CETMUR	240	1 00	0 0000	0 000	0 000	0 000	+0 0	0 00
Cetraria pinastri	CETPIN	240	15 42	0 0045	0 016	0 001	0 287	+0 0	0 10
Cetraria sepincola	CETSEP	240	0 0	0 0	0 0	0 0	0 0	+0 0	0 0
Cladina arbuscula	CLAARB	240	100 00	36 8646	21 305	1 375	0 246	0 00	99 00
Cladina mitis	CLAMIT	240	100 00	35 8646	21 305	1 375	0 246	0 00	99 00
Cladina rangiferina	CLARAN	240	5 42	0 0017	0 011	0 001	0 438	+0 0	0 10
Cladina stellaris	CLASTE	240	37 92	0 2272	0 586	0 038	0 257	+0 0	5 00
Cladonia amaurocraea	CLAAMA	240	7 02	0 0023	0 013	0 001	0 388	+0 0	0 10
Cladonia capitata	CLACAP	240	1 03	0 0008	0 002	0 000	0 250	+0 0	0 01
Cladonia carrosa	CLACAR	240	0 03	0 0000	0 001	0 000	1 000	+0 0	0 01
Cladonia cenotea	CLACEN	240	24 17	0 0020	0 008	0 000	0 176	+0 0	0 10
Cladonia chlorophaea	CLACHL	240	05 43	0 0475	0 183	0 012	0 247	+0 0	2 00
Cladonia coccifera	CLACOC	240	48 25	0 0488	0 228	0 015	0 323	+0 0	2 00
Cladonia coniocraea	CLACON	240	2 00	0 0000	0 007	0 000	0 727	+0 0	0 10
Cladonia cornuta	CLACOR	240	07 02	0 0000	0 072	0 003	0 002	+0 0	0 00
Cladonia cristata	CLACRI	240	3 75	0 0004	0 002	0 000	0 328	+0 0	0 01
Cladonia cristatella	CLACRT	240	57 50	0 0050	0 743	0 048	0 000	+0 0	10 00
Cladonia gonecha	CLAGON	240	47 50	0 0123	0 037	0 002	0 143	+0 0	0 10
Cladonia grac.lis	CLAGRA	240	87 50	0 0066	0 289	0 004	0 140	+0 0	10 00
Cladonia multiformis	CLAMUL	240	75 83	0 1002	0 338	0 022	0 118	+0 0	1 00
Cladonia phyllophora	CLAPHY	240	70 00	0 2870	0 530	0 034	0 185	+0 0	2 00
Cladonia pyxidata	CLAPYX	240	11 25	0 0028	0 013	0 001	0 331	+0 0	0 10
Cladonia squamosa	CLASQU	240	0 03	0 0000	0 001	0 000	1 000	+0 0	0 01
Cladonia subulata	CLASUB	240	3 02	0 0002	0 002	0 000	0 372	+0 0	0 01
Cladonia uncialis	CLAUNC	240	48 43	0 0230	0 112	0 170	0 280	+0 0	1 00
Cladonia verticillata	CLAVER	240	6 67	0 0007	0 003	0 000	0 242	+0 0	0 01
Lecidea granulosa	LECGRA	240	4 17	0 0006	0 002	0 000	0 264	+0 0	0 01
Peltigera aphthosa	PELAPH	240	35 00	0 1107	0 279	0 026	0 250	+0 0	2 00
Peltigera malacea	PELMAL	240	78 33	1 8816	1 072	0 121	0 677	+0 0	15 00
Peltigera pulverulenta	PELPUL	240	1 25	0 0126	0 144	0 008	0 742	+0 0	2 00
Peltigera rufescens	PELRUF	240	10 00	0 0267	0 197	0 010	0 382	+0 0	2 00
Stereocaulon alpinum	STEALP	240	4 17	0 0167	0 128	0 008	0 465	+0 0	2 00
Bryoria spp	BRYSPP	240	45 83	0 0087	0 011	0 001	0 072	+0 0	0 10
Cetraria halei	CETHAL	240	88 67	0 0257	0 138	0 009	0 234	+0 0	1 00
Cetraria pinastri	CETPIN	240	95 17	0 0913	0 283	0 002	0 481	+0 0	10 00
Evernia mesomorpha	EVEMES	240	70 00	0 0100	0 017	0 001	0 113	+0 0	0 10
Hypogymnia physodes	HYPPHY	240	85 17	0 0700	0 200	0 013	0 183	+0 0	2 00
Parmelia elegantula	PARELE	240	0 0	0 0	0 0	0 0	0 0	+0 0	0 0
Parmelia sulcata	PARSUL	240	35 42	0 0068	0 018	0 001	0 177	+0 0	0 10
Parmeliopsis ambigua	PARAMB	240	93 33	0 0003	0 130	0 008	0 188	+0 0	1 00
Parmeliopsis hyperopta	PARHYP	240	58 25	0 0230	0 070	0 005	0 197	+0 0	1 00
Platismatia glauca	PLAGLA	240	0 42	0 0000	0 001	0 000	1 000	+0 0	0 01
USNSPP SPP	USNSPP	240	00 42	0 0030	0 210	0 010	0 212	+0 0	3 00

BASED ON 97 POSITIVE MEANS SIMPSON'S INDEX OF DOMINANCE CONCENTRATION C = 0 573
SHANNON-WEAVER INDEX OF DIVERSITY H' = 1 101 (NATURAL LOGS)

97 OF THE 63 VARIABLES HAVE POSITIVE MEANS WHICH SUM TO 47 7000


Arkansas Oil Sands Ecological Monitoring August 1983 Surveys 04/03/83 PAGE 16
Descriptive Statistics for Each Species Variable and Each Stand
FILE A0803025 (CREATION DATE = 04/03/83) Sixteen Stand Tables of 1983 Brycid Cover % Data (35m2)
SUBFILE S01N S02N S03N S04N S02 S03 S04 S06 S07 S08
S09 S10 S12 S14 S15 S16
MEAN (LOG TO BASE 10)
SEMIVARIANCE -6 -4 -3 -2 -1 0 1 2
POSITION
CLAMIT
PLESCH
POLPIL
POLMOL
HYLSPL
CLAUNC
CLAGRA
CLACOR
CLAPHY
DICPOL
CLASTE
CLAMUL
POLJUN
POLAPH
CETGRI
CLACRT
PTICC
CETPIN
HYPPHY
CLACOC
USNSPP
PARAMB
CLACNL
CETNIG
DICSCO
POLRUF
PARHYP
BYSALP
EBRPUR
PTIPUL
POLPUL
CLAGRO
EVERMS
LECSAA
BRYSPP
PARSUL
CETNIV
CLACEO
CLAPYX
CLAAMA
CLARAN
BRYPLA
CLAVER
CLACAP
CLACON
PTICIL
CLACRP
CLAGUG
BRABAL
PENSUT
SPLSPP
SURPUL
CLACAR
CLASOL
TORMIT
PLAGLA
TETANC
-6 -4 -3 -2 -1 0 1 2

ARMOREE 9'' Sands Ecological Monitoring August 1982 Surveys 04/02/83 PAGE 15
Descriptive Statistics for Soap Synthesis Variable
FILE ARMOREE (CREATION DATE = 04/02/83) Sixteen Stand Tables of 1982 Shrub Cover % Data (25m2)
SUBFILE $01N $02N $03N $04N $05 $06 $07 $08
$09 $10 $12 $14 $15 $16

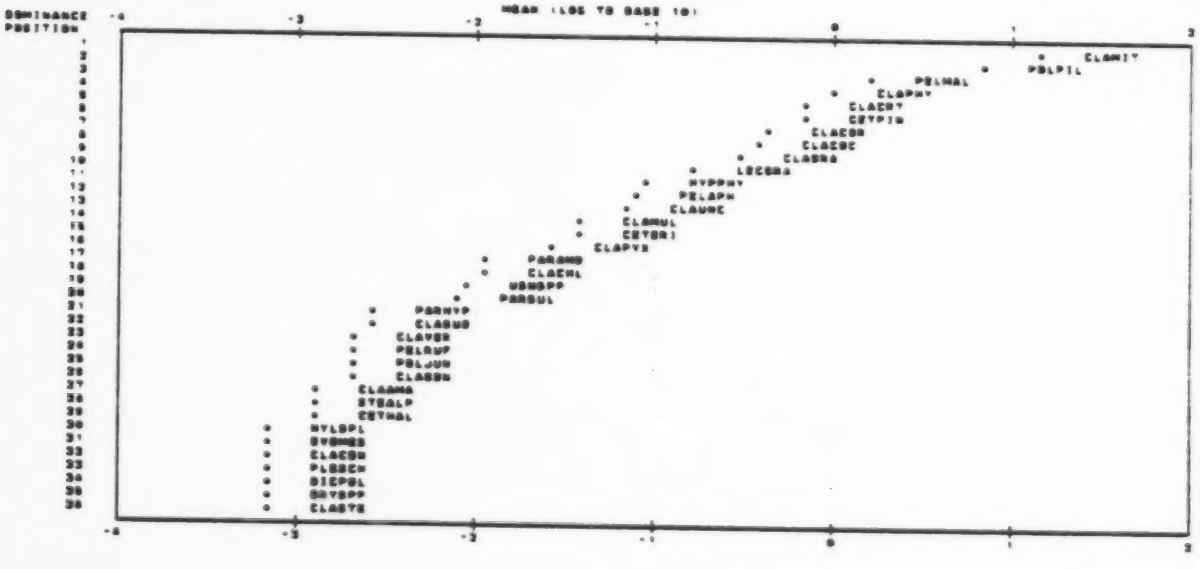
LABEL	VARIABLE	N	PRES %	MEAN	STD DEV	STD ERR	STD DEV /MEAN	MINIMUM	MAXIMUM
Bryophyte Cover % per Plot	BRYOPHCV	240	95 75	7 0000	10 384	0 893	0 142	0 0	85 10
Bryophyte Spp Richness per Plot	BRYOPHSP	240	95 75	3 6708	1 709	0 110	0 040	0 0	8 00
Terr Lichen Cover % per Plot	LCHTERCV	240	100 00	40 6167	33 333	3 001	0 051	0 04	97 01
Terr Lichen Spp Richness per Plot	LCHTERSP	240	100 00	9 9333	3 301	0 149	0 015	3 00	16 00
Epiph Lichen Cover % per Plot	LCHEPICV	240	89 55	0 3813	0 763	0 051	0 140	0 0	10 00
Epiph Lichen Spp Richness per Plot	LCHEPISP	240	89 55	7 3625	1 975	0 130	0 017	0 0	10 00
Lichen Cover % per Plot	LCHALLCV	240	100 00	40 7750	33 255	3 002	0 051	0 33	97 03
Lichen Spp Richness per Plot	LCHALLSP	240	100 00	17 3958	3 174	0 206	0 012	4 00	24 00
Cover % per Plot of All Spp	TOTALCV	240	100 00	47 7500	35 170	1 007	0 042	1 21	99 03
Richness per Plot of All Spp	TOTALSP	240	100 00	30 1667	5 404	0 330	0 011	8 00	37 00

Athabasca Oil Sands Ecological Monitoring August 1992 Surveys 04/02/93 PAGE 15
Descriptive Statistics for Each Species Variable and Each Stand
FILE A0592025 (CREATION DATE = 04/02/93) Sixteen Stand Tables of 1992 Bryoid Cover % Data (25m2)
SUBFILE Both

LABEL	VARIABLE	N	PRES %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Aulacomnium palustre	AULPAL	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Brachythecium salebrosum	BRASAL	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Ceratodon purpureus	CERPUR	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Dicranum polysetum	DICPOL	16	6.67	0.0007	0.003	0.001	1.000	+0.0	0.01
Dicranum scoparium	DICSCO	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Ditrichum flexicaule	DITFLE	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Drepanocladus uncinatus	DRPUNC	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Eurhynchium pulchellum	EURPUL	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Hylocomium splendens	HYLSPL	16	6.67	0.0007	0.003	0.001	1.000	+0.0	0.01
Orthodicranum flagellare	ORTFLA	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Pleurozium schreberi	PLESCH	16	6.67	0.0007	0.003	0.001	1.000	+0.0	0.01
Ponia nutans	PONNUT	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Polytrichum juniperinum	POLJUN	16	25.00	0.0020	0.004	0.001	0.535	+0.0	0.01
Polytrichum piliferum	POLPIL	16	100.00	7.0207	10.335	2.584	0.370	0.01	35.00
Ptilidium ciliare	PTICIL	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Ptilidium pulcherrimum	PTIPUL	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Ptilium crista-castrensis	PTICC	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Sphagnum spp	SPHSPP	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Tetraplodon angustatus	TETANG	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Tomenthypnum nitens	TOMNIT	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Cetraria cucullata	CETCUC	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Cetraria ericetorum	CETERI	16	56.67	0.0367	0.047	0.012	0.333	+0.0	0.10
Cetraria nivalis	CETNIV	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Cladina mitis	CLAMIT	16	100.00	16.8133	13.419	3.354	0.237	0.10	40.00
Cladina rangiferina	CLARAN	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Cladina stellaris	CLASTE	16	6.67	0.0007	0.003	0.001	1.000	+0.0	0.01
Cladonia amaurocraea	CLAAMA	16	13.33	0.0013	0.004	0.001	0.837	+0.0	0.01
Cladonia apodiata	CLAAPO	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Cladonia carneola	CLACAR	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Cladonia cenotea	CLACEN	16	6.67	0.0007	0.003	0.001	1.000	+0.0	0.01
Cladonia chlorophaea	CLACHL	16	43.67	0.0107	0.023	0.007	0.510	+0.0	0.10
Cladonia coccifera	CLACOC	16	93.33	0.3700	0.837	0.184	0.417	+0.0	2.00
Cladonia coniocraea	CLACON	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Cladonia cornuta	CLACOR	16	73.33	0.0467	0.715	0.184	0.419	+0.0	2.00
Cladonia crispata	CLACRP	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Cladonia cristatella	CLACRT	16	60.00	0.0860	1.383	0.387	0.513	+0.0	5.00
Cladonia gonecha	CLAGON	16	20.00	0.0020	0.004	0.001	0.535	+0.0	0.01
Cladonia gracilis	CLAGRA	16	80.00	0.3287	0.841	0.199	0.508	+0.0	3.00
Cladonia multiformis	CLAMUL	16	93.67	0.0387	0.047	0.012	0.328	+0.0	0.10
Cladonia phyllophora	CLAPHY	16	100.00	1.0213	0.419	0.211	0.207	0.01	2.00
Cladonia pyxidata	CLAPYX	16	33.33	0.0273	0.048	0.012	0.439	+0.0	0.10
Cladonia squamosa	CLASQU	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Cladonia subulata	CLASUB	16	26.67	0.0027	0.005	0.001	0.443	+0.0	0.01
Cladonia uncialis	CLAUNC	16	20.00	0.0080	0.253	0.057	0.570	+0.0	1.00
Cladonia verticillata	CLAVER	16	20.00	0.0020	0.004	0.001	0.535	+0.0	0.01
Loxodea granulosa	LECGRA	16	46.67	0.1547	0.348	0.088	0.577	+0.0	1.00
Peltigera canina	PELCAN	16	20.00	0.0760	0.257	0.068	0.909	+0.0	1.00
Peltigera malacea	PELMAL	16	100.00	1.5160	1.356	0.348	0.214	0.01	5.00
Peltigera pulverulenta	PELPUL	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Peltigera rufescens	PELRUF	16	20.00	0.0020	0.004	0.001	0.535	+0.0	0.01
Stereocaulon alpinum	STEALP	16	13.33	0.0013	0.004	0.001	0.837	+0.0	0.01
Bryoria spp	BRYSPP	16	6.67	0.0007	0.003	0.001	1.000	+0.0	0.01
Cetraria halei	CETHAL	16	13.33	0.0013	0.004	0.001	0.837	+0.0	0.01
Cetraria pinastri	CETPIN	16	100.00	0.5880	2.575	0.585	0.837	0.01	10.00
Evernia mesomorpha	EVEMES	16	6.67	0.0007	0.003	0.001	1.000	+0.0	0.01
Hypogymnia physodes	HYPPHY	16	33.33	0.0073	0.234	0.059	0.793	+0.0	1.00
Parmelia olegantula	PAREGA	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Parmelia sulcata	PARSUL	16	26.00	0.0030	0.005	0.001	0.535	+0.0	0.01
Parmeliopsis ambigua	PARAMB	16	53.33	0.0113	0.025	0.006	0.570	+0.0	0.10
Parmeliopsis hyperopta	PARHYP	16	26.67	0.0027	0.005	0.001	0.443	+0.0	0.01
Platismatia glauca	PLAGLA	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Usnea spp	USNSPP	16	33.33	0.0093	0.035	0.007	0.705	+0.0	0.10

BASED ON 30 POSITIVE MEANS SIMPSON'S INDEX OF DOMINANCE CONCENTRATION, C = 0.350
SHANNON-WEAVER INDEX OF DIVERSITY H' = 1.457 (NATURAL LOGS)

30 OF THE 83 VARIABLES HAVE POSITIVE MEANS, WHICH SUM TO 27.3067

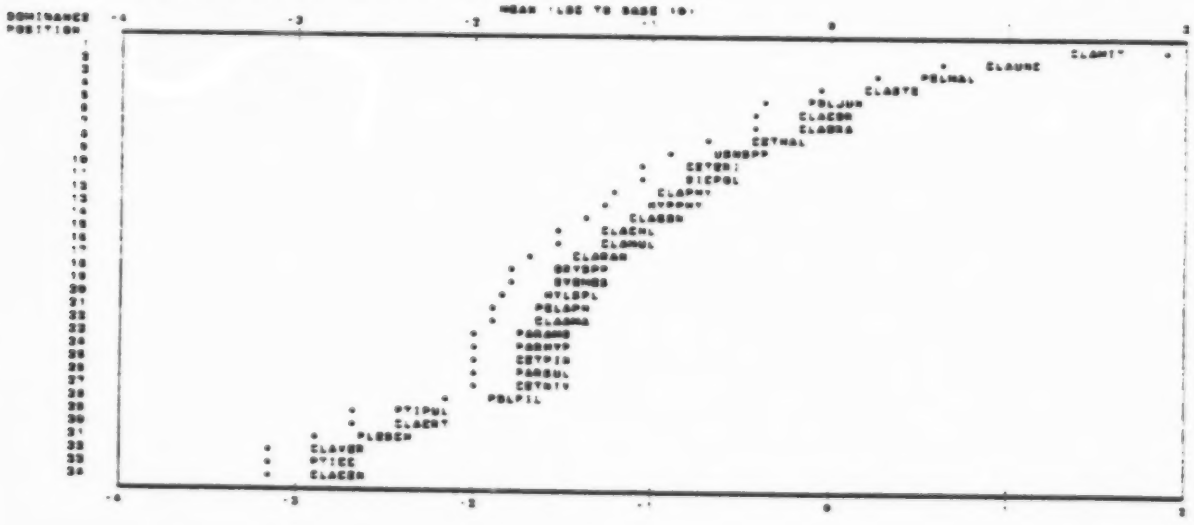


```
ATHABASCA Oil Sands Ecological Monitoring: August 1982 Surveys                    04/02/03        PAGE   19
Descriptive Statistics for Each Species Variable and Each Stand
FILE   ABS82S2S  (CREATION DATE = 04/02/03)   Sixteen Stand Tables of 1982 Bryoid Cover % Data (3582)
SUBFILE    3639
```

LABEL	VARIABLE	N	PRES %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Aulacomnium palustre	AULPAL	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Brachythecium salebrosum	BRASAL	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Ceratodon purpureus	CERPUR	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Dicranum polysetum	DICPOL	16	12.33	0.0063	0.286	0.065	0.772	+0.0	1.00
Dicranum scoparium	DICSCO	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Ditrichum flexicaule	DITFLE	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Drepanocladus uncinatus	DREUNC	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Eurhynchium pulchellum	EURPUL	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Hylocomium splendens	HYLSPL	16	25.67	0.0147	0.035	0.009	0.613	+0.0	0.10
Drepanocladus flagellifer	DRTFLA	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Pleurozium schreberi	PLESCH	16	13.33	0.0013	0.004	0.001	0.681	+0.0	0.01
Polytrichum juniperinum	POLJUN	16	53.33	0.0353	0.078	0.134	0.384	+0.0	1.00
Polytrichum piliferum	POLPIL	16	13.33	0.0073	0.026	0.007	0.907	+0.0	0.10
Ptilidium ciliare	PTICIL	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Ptilidium pulcherrimum	PTIPUL	16	25.00	0.0020	0.004	0.001	0.535	+0.0	0.01
Ptilium crista-castrensis	PTICC	16	1.67	0.0007	0.003	0.001	1.000	+0.0	0.01
Sphagnum spp	SPLSPP	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Tetraplodon angustatus	TETANG	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Tomenthypnum nitens	TOMNIT	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Cetraria cucullata	CETCUC	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Cetraria ericetorum	CETERI	16	100.00	0.0650	0.033	0.008	0.053	+0.01	0.10
Cetraria nivalis	CETNIV	16	68.00	0.0100	0.035	0.009	0.555	+0.0	0.10
Cladina arbis	CLAMIT	16	100.00	77.0000	7.279	1.877	0.024	58.00	85.00
Cladina rangiferina	CLARAN	16	30.00	0.0300	0.041	0.011	0.535	+0.0	0.10
Cladina stellaris	CLASTE	16	100.00	0.0973	0.278	0.238	0.242	0.01	1.00
Cladonia amaurocraea	CLAAMA	16	68.00	0.0130	0.035	0.008	0.535	+0.0	0.10
Cladonia capitata	CLACAP	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Cladonia carneola	CLACAR	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Cladonia cenotea	CLACEN	16	1.67	0.0007	0.003	0.001	1.000	+0.0	0.01
Cladonia chlorophaea	CLACHL	16	73.33	0.0313	0.063	0.011	0.355	+0.0	0.10
Cladonia coccifera	CLACOC	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Cladonia cornigera	CLACRN	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Cladonia cornuta	CLACOR	16	100.00	0.4000	0.439	0.113	0.283	0.10	1.00
Cladonia crispata	CLACRP	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Cladonia cristatella	CLACRT	16	20.00	0.0020	0.004	0.001	0.535	+0.0	0.01
Cladonia gonecha	CLAGON	16	68.67	0.0627	0.060	0.013	0.254	+0.0	0.10
Cladonia gracilis	CLAGRA	16	83.33	0.2000	0.267	0.182	0.351	+0.0	2.00
Cladonia multiformis	CLAMUL	16	83.33	0.0313	0.044	0.011	0.350	+0.0	0.10
Cladonia phyllophora	CLAPHY	16	68.00	0.0638	0.065	0.013	0.201	+0.0	0.10
Cladonia pyxidata	CLAPYX	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Cladonia squamosa	CLASQU	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Cladonia subulata	CLASUB	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Cladonia uncialis	CLAUNC	16	68.67	4.3500	7.883	1.883	0.433	+0.0	25.00
Cladonia verticillata	CLAVER	16	1.67	0.0007	0.003	0.001	1.000	+0.0	0.01
Leptogium granulosa	LEPGRA	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Peltigera canthosa	PELCAN	16	13.33	0.0133	0.035	0.008	0.681	+0.0	0.10
Peltigera malacea	PELMAL	16	93.33	1.0833	1.857	0.479	0.353	+0.0	5.00
Peltigera pulverulenta	PELPUL	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Peltigera rufescens	PELRUF	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Stereocaulon alpinum	STEALP	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Bryoria spp	BRYSPP	16	100.00	0.0150	0.033	0.006	0.370	0.01	0.10
Cetraria fallax	CETFAL	16	100.00	0.2500	0.333	0.083	0.451	0.01	1.00
Cetraria pinastri	CETPIN	16	100.00	0.0100	0.0	0.0	0.0	0.01	0.01
Evernia mesomorpha	EVEMES	16	100.00	0.0150	0.033	0.006	0.370	0.01	0.01
Hypogymnia physodes	HYPPHY	16	100.00	0.0638	0.065	0.013	0.201	0.01	0.10
Parmelia elegantula	PARELE	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Parmelia sulcata	PARSUL	16	68.00	0.0100	0.025	0.007	0.535	+0.0	0.10
Parmeliopsis ambigua	PARAMB	16	100.00	0.0100	0.0	0.0	0.0	0.01	0.01
Parmeliopsis hyperopta	PARHYP	16	100.00	0.0100	0.0	0.0	0.0	0.01	0.01
Platismatia glauca	PLAGLA	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
USNEA SPP	USNSPP	16	100.00	0.1300	0.268	0.063	0.486	0.01	1.00

BASED ON   34 POSITIVE MEANS SIMPSON'S INDEX OF DOMINANCE CONCENTRATION, C = 0.891
                                SHANNON-WEAVER INDEX OF DIVERSITY,   H' = 2.0.531 (NATURAL LOGS)

  34 OF THE 63 VARIABLES HAVE POSITIVE MEANS WHICH SUM TO   00 1002

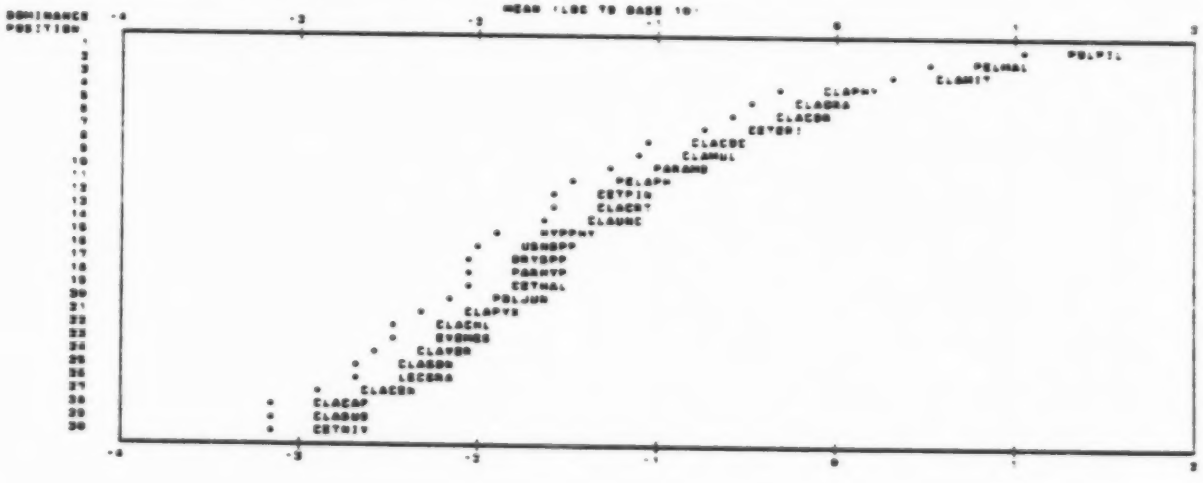


Athabasca Oil Sands Geological Monitoring August 1982 Surveys 04/03/83 PAGE 39
Descriptive Statistics for Each Species Variable and Each Stand
FILE ABS82839 (CREATION DATE = 04/03/83) Sixteen Stand Tables of 1982 Bryoid Cover % Data (25m2)
SUBFILE 8839

LABEL	VARIABLE	N	PRES %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Aulacomnium palustre	AULPAL	16	0 0	0 0	0 0	0 0	0 0	+0 0	+0 0
Brachythecium salebrosum	BRASAL	16	0 0	0 0	0 0	0 0	0 0	+0 0	+0 0
Ceratodon purpureus	CERPUR	16	0 0	0 0	0 0	0 0	0 0	+0 0	+0 0
Dicranum polysetum	DICPOL	16	0 0	0 0	0 0	0 0	0 0	+0 0	+0 0
Dicranum scoparium	DICSCO	16	0 0	0 0	0 0	0 0	0 0	+0 0	+0 0
Ditrichum flexicaule	DITFLE	16	0 0	0 0	0 0	0 0	0 0	+0 0	+0 0
Drepanocladus uncinatus	DREUNC	16	0 0	0 0	0 0	0 0	0 0	+0 0	+0 0
Eurhynchium pulchellum	EURPUL	16	0 0	0 0	0 0	0 0	0 0	+0 0	+0 0
Hylocomium splendens	HYLSPL	16	0 0	0 0	0 0	0 0	0 0	+0 0	+0 0
Grimmia/Racomitrium flagellare	GRIFLA	16	0 0	0 0	0 0	0 0	0 0	+0 0	+0 0
Pleurozium schreberi	PLESCH	16	0 0	0 0	0 0	0 0	0 0	+0 0	+0 0
Ptilia nutans	PTINUT	16	0 0	0 0	0 0	0 0	0 0	+0 0	+0 0
Polytrichum juniperinum	POLJUN	16	13 33	0 0073	0 035	0 007	0 007	+0 0	0 10
Polytrichum piliferum	POLPIL	16	100 00	11 0687	14 779	3 616	0 333	1 00	50 00
Ptilidium ciliare	PTICIL	16	0 0	0 0	0 0	0 0	0 0	+0 0	+0 0
Ptilidium pulcherrimum	PTIPUL	16	0 0	0 0	0 0	0 0	0 0	+0 0	+0 0
Ptilium crista-castrensis	PTICC	16	0 0	0 0	0 0	0 0	0 0	+0 0	+0 0
Sphagnum spp	SPLSPP	16	0 0	0 0	0 0	0 0	0 0	+0 0	+0 0
Tetraplodon angustatus	TETANG	16	0 0	0 0	0 0	0 0	0 0	+0 0	+0 0
Tomenthypnum nitens	TOMNIT	16	0 0	0 0	0 0	0 0	0 0	+0 0	+0 0
Cetraria cucullata	CETCUC	16	0 0	0 0	0 0	0 0	0 0	+0 0	+0 0
Cetraria ericetorum	CETERI	16	56 67	0 1027	0 335	0 085	0 473	+0 0	1 00
Cetraria nivalis	CETNIV	16	6 67	0 0007	0 003	0 001	1 000	+0 0	0 01
Cladina mitis	CLAMIT	16	100 00	2 1333	1 344	0 323	0 151	1 00	5 00
Cladina rangiferina	CLARAN	16	0 0	0 0	0 0	0 0	0 0	+0 0	+0 0
Cladina stellaris	CLASTE	16	0 0	0 0	0 0	0 0	0 0	+0 0	+0 0
Cladonia amaurocraea	CLAAMA	16	0 0	0 0	0 0	0 0	0 0	+0 0	+0 0
Cladonia capitata	CLACAP	16	6 67	0 0007	0 003	0 001	1 000	+0 0	0 01
Cladonia carrosa	CLACAR	16	0 0	0 0	0 0	0 0	0 0	+0 0	+0 0
Cladonia cenotea	CLACEN	16	13 33	0 0013	0 004	0 001	0 951	+0 0	0 01
Cladonia chlorophaea	CLACHL	16	33 33	0 0033	0 005	0 001	0 378	+0 0	0 01
Cladonia coccifera	CLACOC	16	100 00	0 0080	0 033	0 008	0 003	+0 0	0 10
Cladonia coniocraea	CLACON	16	0 0	0 0	0 0	0 0	0 0	+0 0	+0 0
Cladonia cornuta	CLACOR	16	100 00	0 3747	0 533	0 134	0 091	+0 0	2 00
Cladonia crispata	CLACRP	16	0 0	0 0	0 0	0 0	0 0	+0 0	+0 0
Cladonia cristatella	CLACRT	16	80 00	0 0280	0 038	0 010	0 363	+0 0	0 10
Cladonia gonecha	CLAGON	16	20 00	0 0020	0 004	0 001	0 936	+0 0	0 01
Cladonia gracilis	CLAGRA	16	100 00	0 2303	0 778	0 201	0 338	+0 0	3 00
Cladonia multiformis	CLAMUL	16	46 67	0 0827	0 288	0 088	0 606	+0 0	1 00
Cladonia phyllophora	CLAPHY	16	93 33	0 4806	0 583	0 183	0 333	+0 0	2 00
Cladonia pyxidata	CLAPYX	16	46 67	0 0847	0 066	0 001	0 266	+0 0	0 01
Cladonia squamosa	CLASQU	16	0 0	0 0	0 0	0 0	0 0	+0 0	+0 0
Cladonia subulata	CLASUB	16	6 67	0 0007	0 003	0 001	1 000	+0 0	0 01
Cladonia uncialis	CLAUNC	16	46 67	0 0227	0 040	0 010	0 455	+0 0	0 10
Cladonia verticillata	CLAVER	16	26 67	0 0027	0 005	0 001	0 463	+0 0	0 01
Lecidea granulosa	LECGRA	16	20 00	0 0020	0 004	0 001	0 936	+0 0	0 01
Peltigera aphthosa	PELAPH	16	46 67	0 0347	0 062	0 012	0 357	+0 0	0 10
Peltigera malacea	PELMAL	16	93 33	0 5333	0 918	0 229	0 293	+0 0	10 00
Peltigera pulverulenta	PELPUL	16	0 0	0 0	0 0	0 0	0 0	+0 0	+0 0
Peltigera rufescens	PELRUF	16	0 0	0 0	0 0	0 0	0 0	+0 0	+0 0
Stereocaulon alpinum	STEALP	16	0 0	0 0	0 0	0 0	0 0	+0 0	+0 0
Bryoria spp	BRYSPP	16	53 33	0 0053	0 003	0 001	0 571	+0 0	0 01
Cetraria halei	CETHAL	16	66 67	0 0067	0 004	0 001	0 195	+0 0	0 01
Cetraria pinastri	CETPIN	16	100 00	0 0280	0 037	0 010	0 344	+0 0	0 10
Evernia mesomorpha	EVEMES	16	33 33	0 0033	0 005	0 001	0 378	+0 0	0 01
Hypogymnia physodes	HYPPHY	16	73 33	0 0133	0 034	0 008	0 472	+0 0	0 10
Parmelia elegantula	PARELE	16	0 0	0 0	0 0	0 0	0 0	+0 0	+0 0
Parmelia sulcata	PARSUL	16	0 0	0 0	0 0	0 0	0 0	+0 0	+0 0
Parmeliopsis ambigua	PARAMB	16	100 00	0 0630	0 046	0 012	0 331	+0 0	0 10
Parmeliopsis hyperopta	PARHYP	16	66 67	0 0067	0 004	0 001	0 195	+0 0	0 01
Platismatia glauca	PLAGLA	16	0 0	0 0	0 0	0 0	0 0	+0 0	+0 0
Usnea spp	USNSPP	16	100 00	0 0100	0 0	0 0	0 0	0 01	0 01

BASED ON 30 POSITIVE MEANS SIMPSON'S INDEX OF DOMINANCE CONCENTRATION C = 0 430
SHANNON-WEAVER INDEX OF DIVERSITY H' = 1 352 (NATURAL LOGS)

30 OF THE 62 VARIABLES HAVE POSITIVE MEANS WHICH SUM TO 18 1027

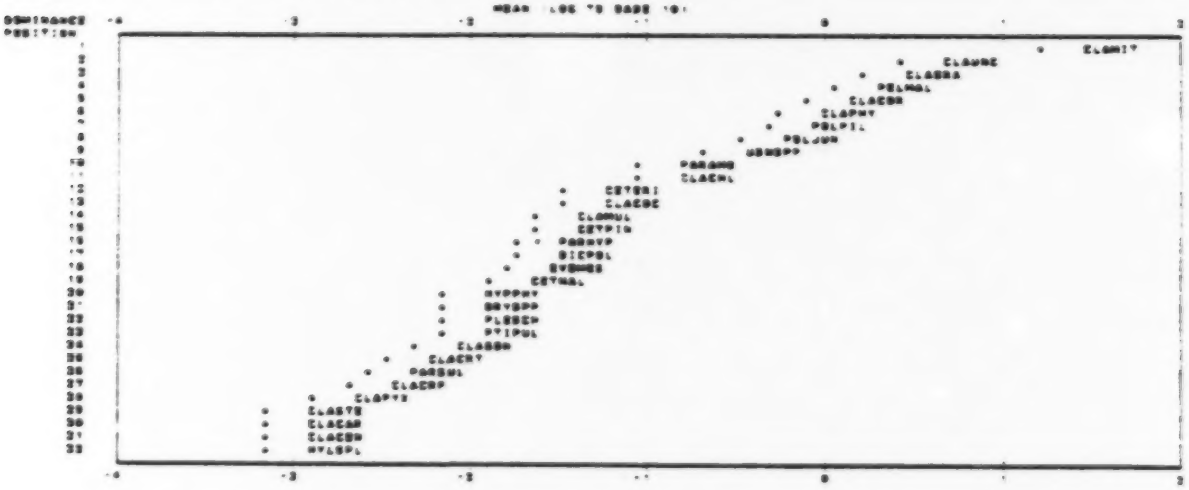


```
A1980000A 0:1 Sonora Geological Monitoring, August 1982 Surveys                    04/02/83        PAGE   3'
Descriptive Statistics for Each Species Variable and Each Stand
FILE    A0583835 (CREATION DATE = 04/02/83)    Sixteen Stand Tables of 1982 Hybrid Cover % Data (25m2)
SUBFILE    8000
```

LABEL	VARIABLE	N	PRES %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Aulacomnium palustre	AULPAL	15	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Brachythecium salebrosum	BRASAL	15	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Carex spp.	CARSPP	15	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Dicranum polysetum	DICPOL	15	53.33	0.0173	0.034	0.009	0.505	+0.0	0.10
Dicranum scoparium	DICSCO	15	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Ditrichum flexicaule	DITFLE	15	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Drepanocladus uncinatus	DREUNC	15	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Eurhynchium pulchellum	EURPUL	15	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Hylocomium splendens	HYLSPL	15	6.67	0.0007	0.003	0.001	1.000	+0.0	0.01
Drepanocladus fluitans	DRPFLA	15	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Pleurozium schreberi	PLESCH	15	13.33	0.0073	0.026	0.007	0.997	+0.0	0.10
Ponticaulis nutans	PONNUT	15	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Polytrichum juniperinum	POLJUN	15	53.33	0.3400	0.510	0.187	0.493	+0.0	2.00
Polytrichum piliferum	POLPIL	15	66.67	0.5073	0.508	0.187	0.319	+0.0	2.00
Ptilidium ciliare	PTICIL	15	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Ptilidium pulcherrimum	PTIPUL	15	13.33	0.0073	0.028	0.007	0.997	+0.0	0.10
Ptilium crista-castrensis	PTICC	15	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Solidago spp.	SPLSPP	15	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Tetraphidopsis angustatus	TETANG	15	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Tomenthypnum nitens	TOMNIT	15	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Cetraria cucullata	CETCUC	15	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Cetraria ericetorum	CETERI	15	93.33	0.9353	0.047	0.012	0.047	+0.0	1.10
Cetraria nivalis	CETNIV	15	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Cladina arbuscula	CLAARB	15	100.00	15.2613	22.331	5.765	0.463	0.01	80.00
Cladina rangiferina	CLARAN	15	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Cladina stellaris	CLASTE	15	6.67	0.0007	0.003	0.001	1.000	+0.0	0.01
Cladonia abbreviata	CLAABB	15	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Cladonia cariosa	CLACAR	15	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Cladonia cervicornis	CLACAS	15	6.67	0.0007	0.003	0.001	1.000	+0.0	0.01
Cladonia cenotea	CLACEN	15	6.67	0.0007	0.003	0.001	1.000	+0.0	0.01
Cladonia chlorophaea	CLACHL	15	73.33	0.0853	0.205	0.053	0.772	+0.0	1.00
Cladonia coccifera	CLACOC	15	93.33	0.0333	0.043	0.011	0.323	+0.0	0.10
Cladonia cornuta	CLACOR	15	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Cladonia deformis	CLACRR	15	66.00	0.8220	1.004	0.270	0.335	+0.0	3.00
Cladonia fimbriata	CLAFIP	15	20.00	0.0020	0.004	0.001	0.535	+0.0	0.01
Cladonia floerkeana	CLAFLO	15	33.33	0.0033	0.005	0.001	0.378	+0.0	0.01
Cladonia gonecha	CLAGON	15	66.67	0.0047	0.005	0.001	0.282	+0.0	0.01
Cladonia gracilis	CLAGRA	15	93.33	0.5813	2.160	0.554	0.358	+0.0	8.00
Cladonia multiformis	CLAMUL	15	46.67	0.0227	0.040	0.010	0.455	+0.0	0.10
Cladonia phyllophora	CLAPHY	13	93.33	0.2300	0.599	0.155	0.297	+0.0	2.00
Cladonia pyxidata	CLAPYX	15	13.33	0.0013	0.004	0.001	0.577	+0.0	0.01
Claopodium spp.	CLASPP	15	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Cladonia subulata	CLASUB	15	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Cladonia uncialis	CLAUNC	15	66.00	2.4673	3.466	0.895	0.360	+0.0	10.00
Cladonia verticillata	CLAVER	15	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Leucobryum glaucum	LEUGLA	15	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Peltigera aphthosa	PELAPH	15	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Peltigera malacea	PELMAL	15	73.33	0.1427	0.344	0.247	0.283	+0.0	1.00
Peltigera polydactylon	PELPOL	15	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Peltigera rufescens	PELRUF	15	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Stereocaulon alpinum	STEALP	15	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Sphagnum spp.	SPHSPP	15	73.33	0.0073	0.005	0.001	0.191	+0.0	0.01
Cetraria halei	CETHAL	15	73.33	0.0133	0.024	0.006	0.472	+0.0	0.10
Cetraria pinastri	CETPIN	15	100.00	0.0220	0.033	0.008	0.372	0.01	0.10
Evernia mesomorpha	EVEMES	15	33.33	0.0133	0.035	0.009	0.583	+0.0	0.10
Hypogymnia physodes	HYPPHY	15	73.33	0.0073	0.005	0.001	0.191	+0.0	0.01
Parmelia olivacea	PAROLI	15	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Parmelia sulcata	PARSUL	15	26.67	0.0027	0.005	0.001	0.443	+0.0	0.01
Parmelia spp. (undiv.)	PARSPP	15	33.33	0.0073	0.026	0.006	0.753	+0.0	0.10
Parmelia hyperopta	PARHYP	15	60.00	0.0100	0.034	0.008	0.483	+0.0	0.10
Platismatia glauca	PLAGLA	15	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Usnea spp.	USNSPP	15	66.67	0.2133	0.556	0.144	0.575	+0.0	2.00

BASED ON   33 POSITIVE MEANS   SIMPSON'S INDEX OF DOMINANCE CONCENTRATION C = 0.483
                                  SHANNON-WEAVER INDEX OF DIVERSITY.   H' = 1.348 (NATURAL LOGS)

  33 OF THE 63 VARIABLES HAVE POSITIVE MEANS WHICH SUM TO   33.3433



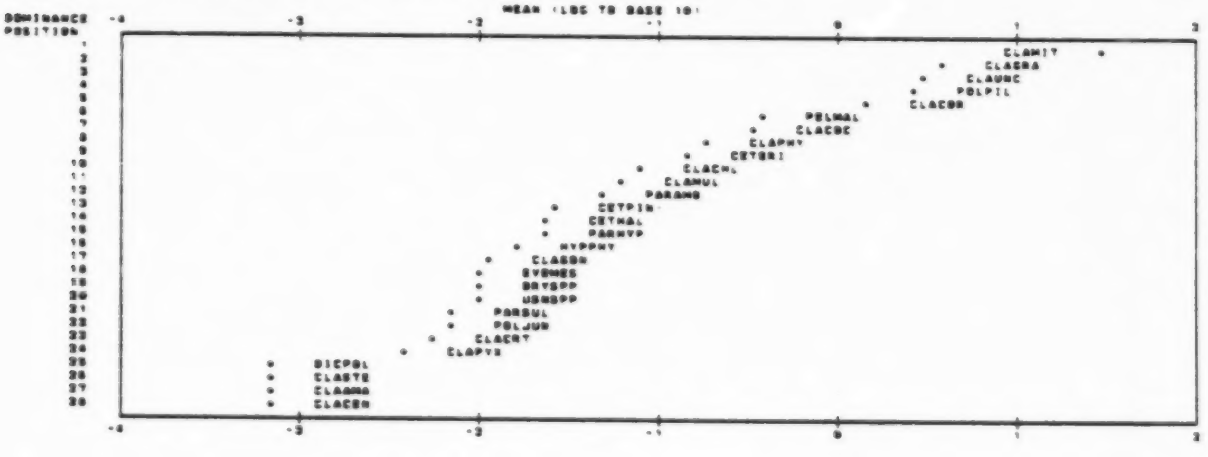
```
```

Athabasca Oil Sands Ecological Monitoring August 1982 Surveys 04/02/83 PAGE 23
Descriptive Statistics for Each Species Variable and Each Stand
FILE ABS82B2S (CREATION DATE = 04/02/83) Sixteen Stand Tables of 1982 Bryoid Cover % Data (25m2)
SUBFILE BRY

LABEL	VARIABLE	N	PRES %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Aulacomnium palustre	AULPAL	16	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Brachythecium salebrosum	BRASAL	16	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ceratodon purpureus	CERPUR	16	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dicranum polysetum	DICPOL	16	6.67	0.0007	0.003	0.001	1.000	0.0	0.01
Dicranum scoparium	DICSCO	16	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ditrichum flexicaule	DITFLE	16	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Drepanocladus uncinatus	DREUNC	16	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Eurhynchium pulchellum	EURPUL	16	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Hylocomium splendens	HYLSPL	16	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Orthothecium flagillare	ORTFLA	16	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pleurozium schreberi	PLESCH	16	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Polia nutans	POLNUT	16	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Polytrichum juniperinum	POLJUN	16	6.67	0.0067	0.026	0.007	1.000	0.0	0.10
Polytrichum piliferum	POLPIL	16	100.00	3.8000	1.371	0.388	0.182	1.00	5.00
Ptilidium ciliare	PTICIL	16	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ptilidium pulcherrimum	PTIPUL	16	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ptilium crista-castrensis	PTICC	16	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sphagnum spp	SPHSPP	16	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Tetraplodon angustatus	TETANG	16	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Tomenthypnum nitens	TOMNIT	16	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cetraria cucullata	CETCUC	16	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cetraria ericetorum	CETERI	16	100.00	0.1450	0.238	0.061	0.418	0.01	1.00
Cetraria nivalis	CETNIV	16	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cladina mitis	CLAMIT	16	100.00	30.4867	27.795	7.177	0.235	2.00	85.00
Cladina rangiferina	CLARAN	16	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cladina stellaris	CLASTE	16	6.67	0.0007	0.003	0.001	1.000	0.0	0.01
Cladonia amaurocraea	CLAAMA	16	6.67	0.0007	0.003	0.001	1.000	0.0	0.01
Cladonia capitata	CLACAP	16	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cladonia carneola	CLACAR	16	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cladonia cenotea	CLACEN	16	6.67	0.0007	0.003	0.001	1.000	0.0	0.01
Cladonia chlorophaea	CLACHL	16	25.67	0.0747	0.257	0.053	0.690	0.0	1.00
Cladonia coccifera	CLACOC	16	100.00	0.3280	0.431	0.108	0.331	0.01	1.00
Cladonia coniocraea	CLACON	16	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cladonia cornuta	CLACOR	16	100.00	1.4133	1.037	0.259	0.183	0.10	4.00
Cladonia crispata	CLACRP	16	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cladonia cristatella	CLACRT	16	93.33	0.0053	0.008	0.001	0.350	0.0	0.01
Cladonia gonecha	CLAGON	16	46.67	0.0107	0.025	0.007	0.510	0.0	0.10
Cladonia gracilis	CLAGRA	16	100.00	3.8000	2.484	0.561	0.183	1.00	10.00
Cladonia multiformis	CLAMUL	16	93.67	0.0807	0.058	0.013	0.213	0.0	0.10
Cladonia phyllophora	CLAPHY	16	93.67	0.1747	0.238	0.037	0.500	0.0	1.00
Cladonia pyxidata	CLAPYX	16	40.00	0.0040	0.005	0.001	0.327	0.0	0.01
Cladonia sawadae	CLASAW	16	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cladonia subulata	CLASUB	16	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cladonia uncialis	CLAUNC	16	93.67	3.0207	3.142	1.335	0.440	0.0	20.00
Cladonia verticillata	CLAVER	16	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Loxidea granulosa	LECGRA	16	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Peltigera aphtosa	PELAPH	16	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Peltigera malacea	PELMAL	16	93.33	0.3867	0.893	0.207	0.536	0.0	3.00
Peltigera pulverulenta	PELPUL	16	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Peltigera rufescens	PELRUF	16	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Stereocaulon alpinum	STEALP	16	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Bryoria spp	BRYSPP	16	100.00	0.0100	0.0	0.0	0.0	0.01	0.01
Cetraria halei	CETHAL	16	100.00	0.0230	0.033	0.008	0.372	0.01	0.10
Cetraria pinastri	CETPIN	16	100.00	0.0230	0.037	0.010	0.344	0.01	0.10
Evernia mesomorpha	EVEMES	16	100.00	0.0100	0.0	0.0	0.0	0.01	0.01
Hypogymnia physodes	HYPPHY	16	100.00	0.0180	0.032	0.008	0.375	0.01	0.10
Parmelia olegantula	PARELE	16	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Parmelia sulcata	PARSUL	16	73.33	0.0073	0.005	0.001	0.191	0.0	0.01
Parmeliopsis ambigua	PARAMB	16	100.00	0.0450	0.048	0.012	0.266	0.01	0.10
Parmeliopsis hyperopta	PARHYP	16	100.00	0.0230	0.033	0.008	0.372	0.01	0.10
Platismatia glauca	PLAGLA	16	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Usnea spp	USNSPP	16	100.00	0.0100	0.0	0.0	0.0	0.01	0.01

BASED ON 25 POSITIVE MEANS SIMPSON'S INDEX OF DOMINANCE CONCENTRATION C = 0.534
SHANNON-WEAVER INDEX OF DIVERSITY, H' = 1.112 (NATURAL LOGS)

25 OF THE 63 VARIABLES HAVE POSITIVE MEANS, WHICH SUM TO 43.8640

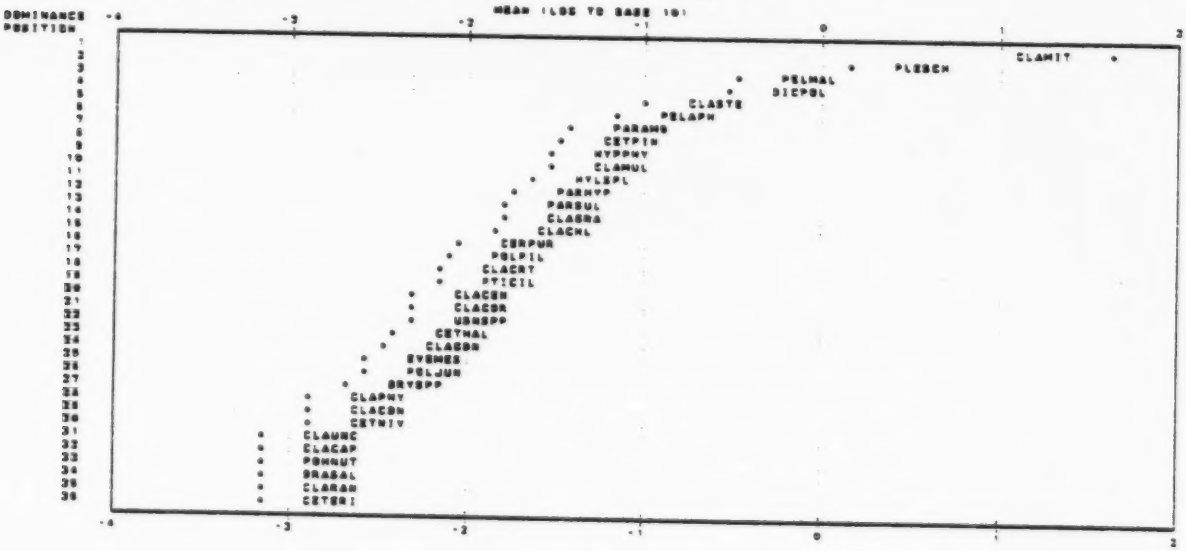


Athabasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/02/83 PAGE 33
Descriptive Statistics for Each Species Variable and Each Stand
FILE A0503835 (CREATION DATE = 04/02/83) Sixteen Stand Tables of 1982 Bryoid Cover % Data (39m2)
SUBFILE 303

LABEL	VARIABLE	N	PRES %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Aulacomnium palustre	AULPAL	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Brachythecium salebrosum	BRASAL	16	6.67	0.0007	0.003	0.001	1.000	+0.0	0.01
Ceratodon purpureus	CERPUR	16	26.67	0.0067	0.026	0.007	0.783	+0.0	0.10
Dicranum polysetum	DICPOL	16	93.33	0.3063	0.433	0.112	0.381	+0.0	1.00
Dicranum scoparium	DICSCO	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Ditrichum flexicaule	DITFLE	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Drepanocladus uncinatus	DREUNC	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Eurhynchium pulchellum	EURPUL	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Hylocomium splendens	HYLSPL	16	40.00	0.0230	0.041	0.010	0.476	+0.0	0.10
Orthodicranum flagellare	ORTFLA	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Pleurozium schreberi	PLESCH	16	73.33	1.4380	3.640	0.882	0.894	+0.0	10.00
Ptilia mutans	PTIMUT	16	6.67	0.0007	0.003	0.001	1.000	+0.0	0.01
Polytrichum juniperinum	POLJUN	16	26.67	0.0027	0.006	0.001	0.443	+0.0	0.01
Polytrichum piliferum	POLPIL	16	20.00	0.0020	0.005	0.001	0.559	+0.0	0.01
Ptilidium ciliare	PTICIL	16	13.33	0.0073	0.026	0.007	0.828	+0.0	0.10
Ptilidium pulcherrimum	PTIPUL	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Ptilium crista-castrensis	PTICC	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Salacnum spp.	SPLSPP	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Tetraplodon angustatus	TETANG	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Tomenthypnum nitens	TOMNIT	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Cetraria cucullata	CETCUC	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Cetraria ericetorum	CETERI	16	6.67	0.0007	0.003	0.001	1.000	+0.0	0.01
Cetraria nivalis	CETNIV	16	13.33	0.0013	0.004	0.001	0.881	+0.0	0.01
Cladina mitis	CLAMIT	16	100.00	40.8067	28.135	7.030	0.184	0.10	85.00
Cladina rangiferina	CLARAN	16	6.67	0.0067	0.003	0.001	1.000	+0.0	0.01
Cladina stellaris	CLASTE	16	73.33	0.1033	0.252	0.065	0.630	+0.0	1.00
Cladonia amaurocraea	CLAAMA	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Cladonia capitata	CLACAP	16	6.67	0.0007	0.003	0.001	1.000	+0.0	0.01
Cladonia carneola	CLACAR	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Cladonia cenotea	CLACEN	16	46.67	0.0047	0.008	0.001	0.238	+0.0	0.01
Cladonia chlorophaea	CLACHL	16	80.00	0.0140	0.024	0.006	0.448	+0.0	0.01
Cladonia coccifera	CLACOC	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Cladonia coniocraea	CLACON	16	13.33	0.0013	0.004	0.001	0.881	+0.0	0.01
Cladonia cornuta	CLACOR	16	46.67	0.0047	0.008	0.001	0.238	+0.0	0.01
Cladonia crispata	CLACRP	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Cladonia cristatella	CLACRT	16	73.33	0.0073	0.008	0.001	0.161	+0.0	0.01
Cladonia gonecha	CLAGON	16	33.33	0.0033	0.005	0.001	0.378	+0.0	0.01
Cladonia gracilis	CLAGRA	16	33.33	0.0183	0.035	0.009	0.843	+0.0	0.10
Cladonia multiformis	CLAMUL	16	60.00	0.0300	0.044	0.011	0.378	+0.0	0.10
Cladonia phyllophora	CLAPHY	16	13.33	0.0013	0.004	0.001	0.881	+0.0	0.01
Cladonia pyxidata	CLAPYX	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Cladonia squamosa	CLASQU	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Cladonia subulata	CLASUB	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Cladonia uncialis	CLAUNC	16	6.67	0.0007	0.003	0.001	1.000	+0.0	0.01
Cladonia verticillata	CLAVER	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Lecidea granulosa	LECGRA	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Peltigera canthnosa	PELAPH	16	13.33	0.0733	0.251	0.057	0.907	+0.0	1.00
Peltigera malacea	PELMAL	16	40.00	0.3840	1.049	0.253	0.739	+0.0	4.00
Peltigera pulverulenta	PELPUL	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Peltigera rufescens	PELRUF	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Stereocaulon alpinum	STEALP	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Bryoria spp	BRYSPP	16	26.00	0.0620	0.204	0.051	0.825	+0.0	0.01
Cetraria halei	CETHAL	16	46.00	0.0040	0.006	0.001	0.335	+0.0	0.01
Cetraria pinastri	CETPIN	16	93.33	0.0333	0.042	0.011	0.327	+0.0	0.01
Evernia mesomorpha	EVEMES	16	26.67	0.0027	0.005	0.001	0.333	+0.0	0.10
Hypogymnia physodes	HYPPHY	16	66.67	0.0307	0.044	0.011	0.363	+0.0	0.01
Parmelia elegantula	PARELE	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Parmelia sulcata	PARSUL	16	40.00	0.0180	0.034	0.008	0.555	+0.0	0.10
Parmeliopsis ambigua	PARAMB	16	73.33	0.0373	0.046	0.012	0.319	+0.0	0.10
Parmeliopsis hyperopta	PARHYP	16	53.33	0.0173	0.034	0.009	0.508	+0.0	0.10
Platismatia glauca	PLAGLA	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Usnea spp	USNSPP	16	46.67	0.0047	0.008	0.001	0.388	+0.0	0.01

BASED ON 36 POSITIVE MEANS. SIMPSON'S INDEX OF DOMINANCE CONCENTRATION, C = 0.557
SHANNON-WEAVER INDEX OF DIVERSITY, H' = 0.331 (NATURAL LOGS)

39 OF THE 63 VARIABLES HAVE POSITIVE MEANS, WHICH SUM TO 43.3867

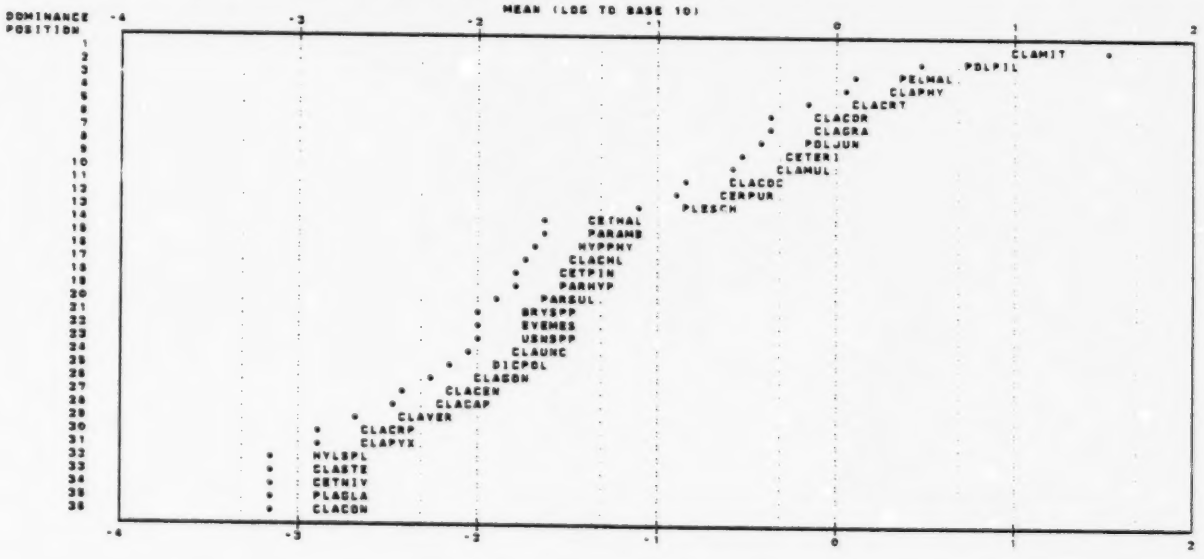


Athabasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/02/83 PAGE 24
Descriptive Statistics for Each Species Variable and Each Stand
FILE ADS82826 (CREATION DATE = 04/02/83) Sixteen Stand Tables of 1982 Bryoid Cover % Data (25m2)
SUBFILE 804

LABEL	VARIABLE	N	FREQ %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Aulacomnium palustre	AULPAL	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Brachythecium salebrosum	BRASAL	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Ceratodon purpureus	CERPUR	15	6.67	0.1333	0.516	0.133	1.000	-0.0	2.00
Dicranum polysetum	DICPOL	15	6.67	0.0067	0.026	0.007	1.000	-0.0	0.10
Dicranum scoparium	DICSCO	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Ditrichum flexicaule	DITFLE	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Drepanocladus uncinatus	DREUNC	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Eurhynchium pulchellum	EURPUL	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Hylocomium splendens	HYLSPL	15	6.67	0.0007	0.003	0.001	1.000	-0.0	0.01
Orthodicranum flagillare	ORTFLA	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Pleurozium schreberi	PLESCH	15	20.00	0.0740	0.257	0.066	0.893	-0.0	1.00
Polytrichum juniperinum	POLJUN	15	86.67	0.3820	0.701	0.181	0.474	-0.0	2.00
Polytrichum piliferum	POLPIL	15	86.67	3.0073	4.083	1.054	0.351	-0.0	15.00
Ptilidium ciliare	PTICIL	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Ptilidium pulcherrimum	PTIPUL	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Ptilium crista-castrensis	PTICC	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Splachnum spp	SPLSPP	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Tetraplodon angustatus	TETANG	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Tomenthypnum nitens	TOMNIT	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cetraria cucullata	CETCUC	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cetraria orbata	CETERI	15	80.00	0.3820	0.438	0.113	0.374	-0.0	1.00
Cetraria nivalis	CETNIV	15	6.67	0.0007	0.003	0.001	1.000	-0.0	0.01
Cladina mitis	CLAMIT	15	100.00	35.0073	22.344	5.770	0.165	0.01	75.00
Cladina rangiferina	CLARAN	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cladina stellaris	CLASTE	15	6.67	0.0007	0.003	0.001	1.000	-0.0	0.01
Cladonia amaurocraea	CLAAMA	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cladonia capitata	CLACAP	15	33.33	0.0033	0.005	0.001	0.378	-0.0	0.01
Cladonia cariosa	CLACAR	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cladonia cenotea	CLACEN	15	40.00	0.0040	0.005	0.001	0.327	-0.0	0.01
Cladonia chlorophaea	CLACHL	15	73.33	0.0193	0.033	0.008	0.441	-0.0	0.10
Cladonia coccifera	CLACOC	15	73.33	0.1513	0.346	0.089	0.891	-0.0	1.00
Cladonia coniocraea	CLACON	15	6.67	0.0007	0.003	0.001	1.000	-0.0	0.01
Cladonia cornuta	CLACOR	15	80.00	0.4400	0.475	0.123	0.279	-0.0	1.00
Cladonia crispata	CLACRP	15	13.33	0.0013	0.004	0.001	0.681	-0.0	0.01
Cladonia cristatella	CLACRT	15	80.00	0.5740	2.580	0.666	0.988	-0.0	10.00
Cladonia gonecha	CLAGON	15	93.33	0.0053	0.005	0.001	0.250	-0.0	0.01
Cladonia gracilis	CLAGRA	15	93.33	0.4353	0.479	0.124	0.284	-0.0	1.00
Cladonia multiformis	CLAMUL	15	93.33	0.3813	0.384	0.099	0.380	-0.0	1.00
Cladonia phyllophora	CLAPHY	15	86.67	1.1487	0.815	0.210	0.183	-0.0	2.00
Cladonia pyxidata	CLAPYX	15	13.33	0.0013	0.004	0.001	0.681	-0.0	0.01
Cladonia squamosa	CLASQU	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cladonia subulata	CLASUB	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cladonia uncialis	CLAUNC	15	33.33	0.0093	0.035	0.007	0.705	-0.0	0.10
Cladonia verticillata	CLAVER	15	20.00	0.0020	0.004	0.001	0.535	-0.0	0.01
Lecidea granulosa	LECGRA	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Peltigera aphthosa	PELAPH	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Peltigera malacea	PELMAL	15	86.67	1.3140	1.085	0.275	0.227	-0.0	3.00
Peltigera pulverulenta	PELPUL	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Peltigera rufescens	PELRUF	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Stereocaulon alpinum	STEALP	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Bryoria spp	BRYSPP	15	100.00	0.0100	0.0	0.0	0.0	0.01	0.01
Cetraria hala	CETHAL	15	100.00	0.0220	0.032	0.008	0.372	0.01	0.10
Cetraria pinastri	CETPIN	15	100.00	0.0180	0.023	0.006	0.375	0.01	0.10
Evernia mesomorpha	EVEMES	15	100.00	0.0100	0.0	0.0	0.0	0.01	0.01
Hypogymnia physodes	HYPPHY	15	93.33	0.0213	0.032	0.008	0.385	-0.0	0.10
Parmelia elegantula	PARELE	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Parmelia sulcata	PARSUL	15	60.00	0.0130	0.035	0.006	0.535	-0.0	0.10
Parmeliopsis ambigua	PARAMB	15	100.00	0.0220	0.032	0.008	0.372	0.01	0.10
Parmeliopsis hyperopta	PARHYP	15	100.00	0.0180	0.023	0.006	0.375	0.01	0.10
Platismatia glauca	PLAGLA	15	6.67	0.0007	0.003	0.001	1.000	-0.0	0.01
Usnea spp	USNSPP	15	100.00	0.0100	0.0	0.0	0.0	0.01	0.01

BASED ON 38 POSITIVE MEANS: SIMPSON'S INDEX OF DOMINANCE CONCENTRATION, C = 0.857
SHANNON-WEAVER INDEX OF DIVERSITY, H' = 0.904 (NATURAL LOGS)

38 OF THE 62 VARIABLES HAVE POSITIVE MEANS, WHICH SUM TO 43.4240

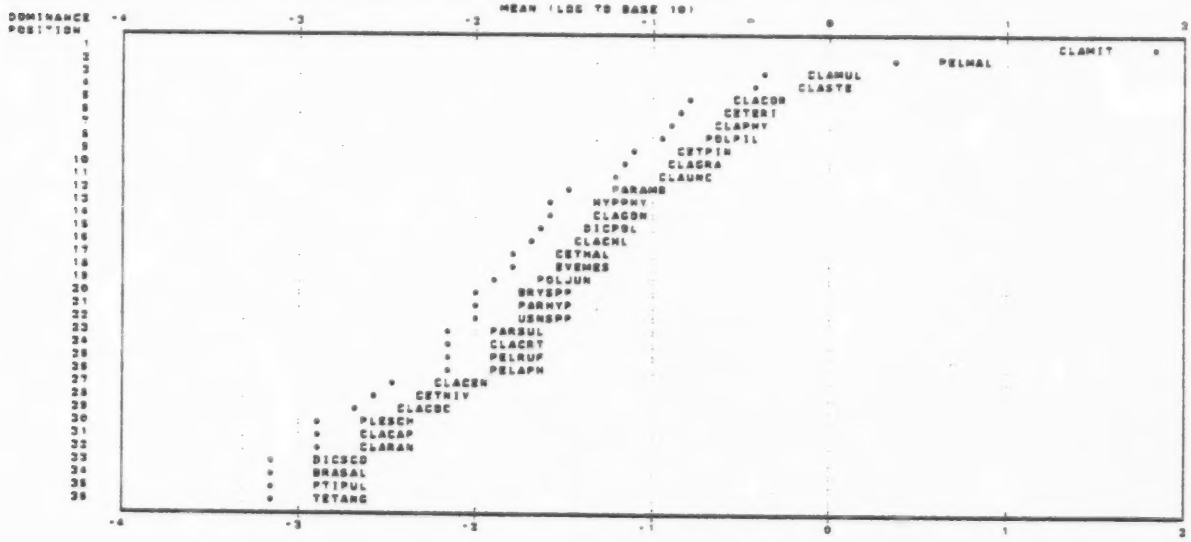


Athabasca Oil Sands Ecological Monitoring August 1982 Surveys 04/02/83 PAGE 28
Descriptive Statistics for Each Species Variable and Each Stand
FILE ACS82825 (CREATION DATE = 04/02/83) Sixteen Stand Tables of 1982 Bryoid Cover % Data (25m2)
SUBFILE 305

LABEL	VARIABLE	N	PRES %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Aulacomnium palustre	AULPAL	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Brachythecium salebrosum	BRASAL	16	6.67	0.0007	0.003	0.001	1.000	+0.0	0.01
Ceratodon purpureus	CERPUR	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Dicranum polysetum	DICPOL	16	50.00	0.0340	0.040	0.010	0.426	+0.0	0.10
Dicranum scoparium	DICSCO	16	6.67	0.0007	0.003	0.001	1.000	+0.0	0.01
Ditrichum flexicaule	DITFLE	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Drepanocladus uncinatus	DREUNC	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Eurhynchium pulchellum	EURPUL	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Hylocomium splendens	HYLSPL	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Orthodicranum flagellare	ORTFLA	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Pleurozium schreberi	PLESCH	16	13.33	0.0013	0.004	0.001	0.861	+0.0	0.01
Ponia nutans	PONNUT	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Polytrichum juniperinum	POLJUN	16	50.00	0.0120	0.025	0.006	0.535	+0.0	0.10
Polytrichum piliferum	POLPIL	16	56.67	0.1067	0.251	0.065	0.597	+0.0	1.00
Ptilidium ciliare	PTICIL	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Ptilidium pulcherrimum	PTIPUL	16	6.67	0.0007	0.003	0.001	1.000	+0.0	0.01
Ptilium crista-castrensis	PTICC	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Salacinum spp	SPLSPP	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Tetraplodon angustatus	TETANG	16	6.67	0.0007	0.003	0.001	1.000	+0.0	0.01
Tomenthypnum nitens	TOMNIT	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Cetraria cucullata	CETCUC	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Cetraria ericetorum	CETERI	16	86.67	0.1467	0.241	0.062	0.442	+0.0	1.00
Cetraria nivalis	CETNIV	16	26.67	0.0027	0.005	0.001	0.443	+0.0	0.01
Cladina mitis	CLAMIT	16	100.00	86.0000	15.492	4.000	0.081	36.00	80.00
Cladina rangiferina	CLARAN	16	13.33	0.0013	0.004	0.001	0.861	+0.0	0.01
Cladina stellaris	CLASTE	16	93.33	0.3793	0.459	0.118	0.316	+0.0	1.00
Cladonia amaurocraea	CLAAMA	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Cladonia capitata	CLACAP	16	13.33	0.0013	0.004	0.001	0.861	+0.0	0.01
Cladonia carassa	CLACAR	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Cladonia cenotea	CLACEN	16	33.33	0.0033	0.006	0.001	0.378	+0.0	0.01
Cladonia chlorophaea	CLACHL	16	80.00	0.0200	0.033	0.008	0.423	+0.0	0.10
Cladonia coccifera	CLACOC	16	26.00	0.0020	0.004	0.001	0.535	+0.0	0.01
Cladonia coniocraea	CLACON	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Cladonia cornuta	CLACOR	16	93.33	0.1633	0.236	0.061	0.367	+0.0	1.00
Cladonia crispata	CLACRP	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Cladonia cristatella	CLACRT	16	66.67	0.0667	0.006	0.001	0.189	+0.0	0.01
Cladonia gonecha	CLAGON	16	73.33	0.0253	0.038	0.010	0.388	+0.0	0.10
Cladonia gracilis	CLAGRA	16	80.00	0.0880	0.047	0.012	0.178	+0.0	0.10
Cladonia multiformis	CLAMUL	16	100.00	0.4540	0.483	0.118	0.263	0.01	1.00
Cladonia phyllophora	CLAPHY	16	86.67	0.1347	0.243	0.063	0.486	+0.0	1.00
Cladonia pyxidata	CLAPYX	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Cladonia sawamosa	CLASAW	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Cladonia subulata	CLASUB	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Cladonia uncialis	CLAUNC	16	80.00	0.0820	0.044	0.012	0.201	+0.0	0.10
Cladonia verticillata	CLAVER	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Lecidea granulosa	LECGRA	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Peltigera aentnosa	PELAPH	16	6.67	0.0067	0.026	0.007	1.000	+0.0	0.10
Peltigera malacea	PELMAL	16	100.00	3.4733	1.844	0.259	0.109	0.10	4.00
Peltigera pulverulenta	PELPUL	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Peltigera rufescens	PELRUF	16	6.67	0.0067	0.026	0.007	1.000	+0.0	0.10
Stereocaulon alpinum	STEALP	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Bryoria spp	BRYSPP	16	100.00	0.0100	0.0	0.0	0.0	0.01	0.01
Cetraria nalei	CETNAL	16	100.00	0.0160	0.033	0.008	0.375	0.01	0.10
Cetraria pinastri	CETPIN	16	100.00	0.0630	0.037	0.010	0.117	0.01	0.10
Evernia mesomorpha	EVEMES	16	100.00	0.0160	0.033	0.008	0.375	0.01	0.10
Hypogymnia physodes	HYPPHY	16	100.00	0.0260	0.037	0.010	0.264	0.01	0.10
Parmelia elegantula	PARELE	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Parmelia sulcata	PARSUL	16	86.67	0.0067	0.006	0.001	0.189	+0.0	0.01
Parmeliopsis ambigua	PARAMB	16	100.00	0.0340	0.041	0.011	0.313	0.01	0.10
Parmeliopsis hyperopta	PARHYP	16	100.00	0.0100	0.0	0.0	0.0	0.01	0.01
Platismatia glauca	PLAGLA	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Usnea spp	USNSPP	16	100.00	0.0100	0.0	0.0	0.0	0.01	0.01

BASED ON 36 POSITIVE MEANS SIMPSON'S INDEX OF DOMINANCE CONCENTRATION, C = 0.883
SHANNON-WEAVER INDEX OF DIVERSITY, H' = 0.336 (NATURAL LOGS)

36 OF THE 83 VARIABLES HAVE POSITIVE MEANS, WHICH SUM TO 79.3967



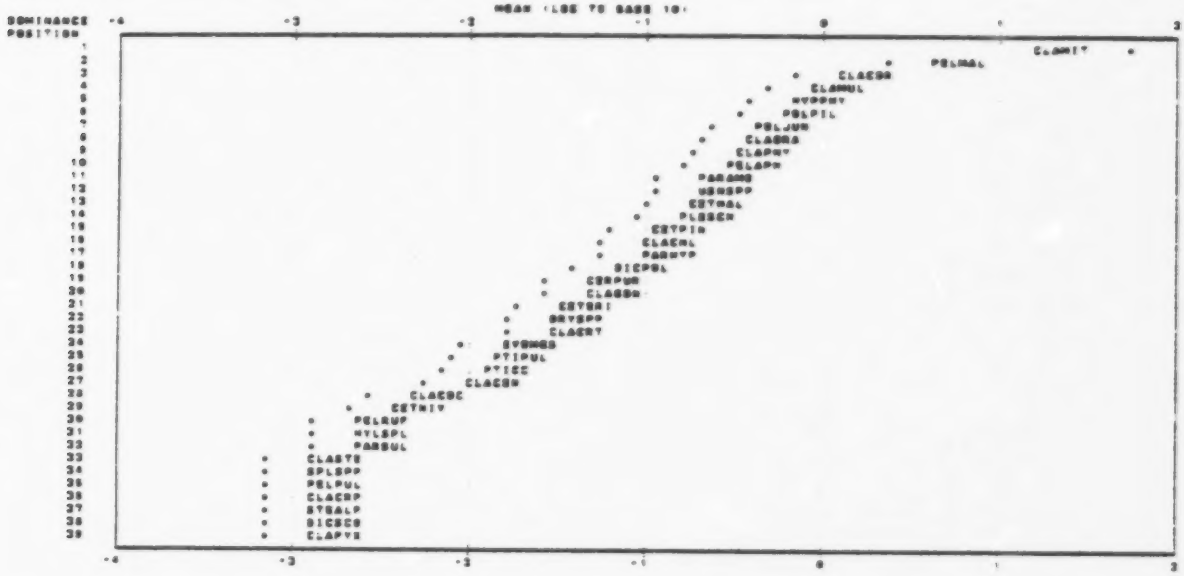
Athabasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/02/83 PAGE 35
Descriptive Statistics for Each Species Variable and Each Stand
FILE A0582825 (CREATION DATE = 04/02/83) Sixteen Stand Tables of 1982 Bryoid Cover % Data (25m2)
SUBFILE 507

LABEL	VARIABLE	N	PRES %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Aulacomnium palustre	AULPAL	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Brachythecium salebrosum	BRASAL	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Ceratodon purpureus	CERPUR	15	26.67	0.0267	0.046	0.012	0.443	-0.0	0.10
Dicranum polysetum	DICPOL	15	73.33	0.0373	0.046	0.012	0.319	-0.0	0.10
Dicranum scoparium	DICSCO	15	6.67	0.0007	0.003	0.001	1.000	-0.0	0.01
Ditrichum flexicaule	DITFLE	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Drepanocladus uncinatus	DREUNC	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Eurhynchium pulchellum	EURPUL	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Hylocomium splendens	HYLSPL	15	13.33	0.0013	0.004	0.001	0.861	-0.0	0.01
Orthodicranum flagellare	ORTFLA	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Pleurozium schreberi	PLESCH	15	40.00	0.0560	0.255	0.066	0.750	-0.0	1.00
Pohlia nutans	POHNUT	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Polytrichum juniperinum	POLJUN	15	60.00	0.2480	0.392	0.101	0.408	-0.0	1.00
Polytrichum piliferum	POLPIL	15	60.00	0.3480	0.478	0.124	0.355	-0.0	1.00
Ptilidium ciliare	PTICIL	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Ptilidium pulcherrimum	PTIPUL	15	20.00	0.0080	0.026	0.007	0.829	-0.0	0.10
Ptilium crista-castrensis	PTICC	15	6.67	0.0067	0.026	0.007	1.000	-0.0	0.10
Splachnum spp.	SPLSPP	15	6.67	0.0007	0.003	0.001	1.000	-0.0	0.01
Tetraplodon angustatus	TETANG	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Tomenthypnum nitens	TOMNIT	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cetraria cucullata	CETCUC	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cetraria ericetorum	CETERI	15	53.33	0.0173	0.034	0.009	0.505	-0.0	0.10
Cetraria nivalis	CETNIV	15	20.00	0.0020	0.004	0.001	0.535	-0.0	0.01
Cladina mitis	CLAMIT	15	100.00	52.0000	20.585	5.241	0.103	28.00	75.00
Cladina rangiferina	CLARAN	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cladina stellaris	CLASTE	15	6.67	0.0007	0.003	0.001	1.000	-0.0	0.01
Cladonia amaurocraea	CLAAMA	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cladonia capitata	CLACAP	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cladonia carlosa	CLACAR	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cladonia cenotea	CLACEN	15	53.33	0.0053	0.005	0.001	0.250	-0.0	0.01
Cladonia chlorophaea	CLACHL	15	80.00	0.0880	0.048	0.013	0.225	-0.0	0.10
Cladonia coccifera	CLACOC	15	26.67	0.0027	0.005	0.001	0.443	-0.0	0.01
Cladonia coniocraea	CLACON	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cladonia cornuta	CLACOR	15	100.00	0.7133	0.676	0.175	0.245	0.10	2.00
Cladonia crispata	CLACRP	15	6.67	0.0007	0.003	0.001	1.000	-0.0	0.01
Cladonia cristatella	CLACRT	15	93.33	0.0153	0.024	0.006	0.397	-0.0	0.10
Cladonia gonecha	CLAGON	15	73.33	0.0253	0.039	0.010	0.388	-0.0	0.10
Cladonia gracilis	CLAGRA	15	100.00	0.2140	0.320	0.083	0.386	0.01	1.00
Cladonia multiformis	CLAMUL	15	100.00	0.4600	0.456	0.118	0.256	0.10	1.00
Cladonia phyllophora	CLAPHY	15	86.67	0.1687	0.332	0.086	0.455	-0.0	1.00
Cladonia pyxidata	CLAPYX	15	6.67	0.0007	0.003	0.001	1.000	-0.0	0.01
Cladonia squamosa	CLASQU	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cladonia subulata	CLASUB	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cladonia uncialis	CLAUNC	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cladonia verticillata	CLAVER	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lecidea granulosa	LECGRA	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Peltigera aphthosa	PELAPH	15	33.33	0.1533	0.348	0.089	0.583	-0.0	1.00
Peltigera malacea	PELMAL	15	100.00	2.3400	1.632	0.388	0.188	0.10	5.00
Peltigera pulverulenta	PELPUL	15	6.67	0.0007	0.003	0.001	1.000	-0.0	0.01
Peltigera rufescens	PELRUF	15	13.33	0.0013	0.004	0.001	0.861	-0.0	0.01
Stereocaulon alpinum	STEALP	15	6.67	0.0007	0.003	0.001	1.000	-0.0	0.01
Bryoria spp.	BRYSPP	15	100.00	0.0180	0.023	0.006	0.378	0.01	0.10
Cetraria halei	CETHAL	15	100.00	0.1080	0.251	0.065	0.612	0.01	1.00
Cetraria pinastri	CETPIN	15	100.00	0.0560	0.048	0.012	0.207	0.01	0.10
Evernia mesomorpha	EVEMES	15	93.33	0.0093	0.003	0.001	0.071	-0.0	0.01
Hypogymnia physodes	HYPPHY	15	100.00	0.3787	0.584	0.153	0.407	0.01	2.00
Parmelia elegantula	PARELE	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Parmelia sulcata	PARSUL	15	13.33	0.0013	0.004	0.001	0.861	-0.0	0.01
Parmeliopsis ambigua	PARAMB	15	100.00	0.1160	0.244	0.064	0.543	0.01	1.00
Parmeliopsis hyperopta	PARHYP	15	100.00	0.0520	0.046	0.012	0.231	0.01	0.10
Platismatia glauca	PLAGLA	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Usnea spp.	USNSPP	15	100.00	0.1120	0.250	0.064	0.576	0.01	1.00

BASED ON 39 POSITIVE MEANS SIMPSON'S INDEX OF DOMINANCE CONCENTRATION, C = 0.811
SHANNON-WEAVER INDEX OF DIVERSITY, H' = 0.552 (NATURAL LOGS)

39 OF THE 52 VARIABLES HAVE POSITIVE MEANS, WHICH SUM TO 87.8127

Atmosphere Oil Sands Ecological Monitoring August 1983 Surveys 04/02/03 PAGE 37
Descriptive Statistics for Each Species Variable and Each Stand
FILE A0502020 (CREATION DATE = 04/02/03) Stratum Stems Tables of 1983 Shrub Cover % Data (35m2)
SUBFILE SST

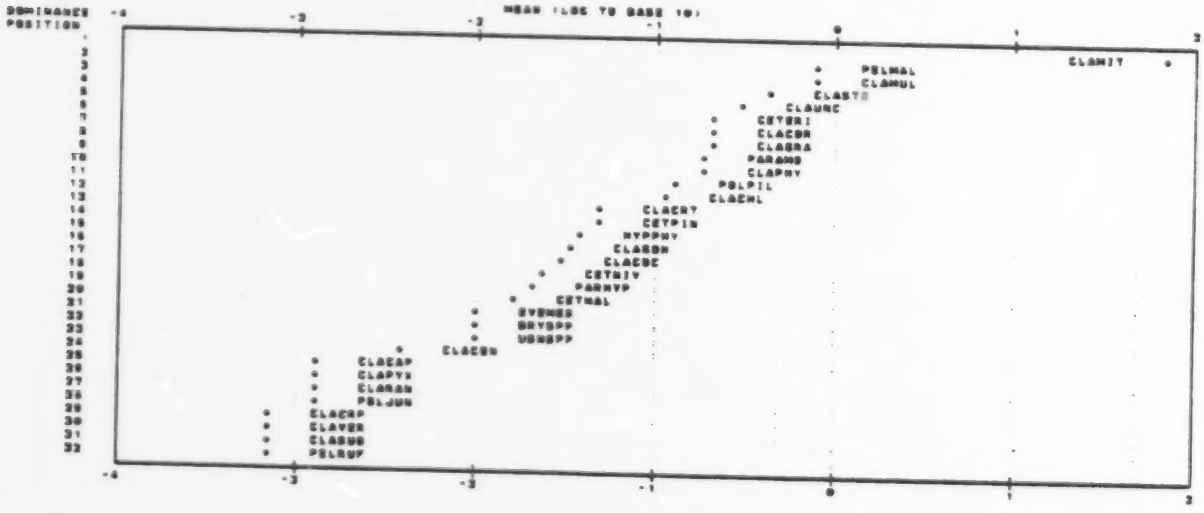


Arcadia St' Sonoma Ecological Monitoring August 1983 Surveys
Descriptive Statistics for Each Species Variable and Each Stand 04/03/83 PAGE 38
FILE A08823B (CREATION DATE = 04/03/83) Station Stand Tables of 1983 Bryoid Cover % Data (25m2)
SUBFILE SPP

LABEL	VARIABLE	N	PRES %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Autocoenium saluetra	AULPAL	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Brachythecium salebrosum	BRASAL	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Ceratodon purpureus	CERPUR	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Dicranum polysetum	DICPOL	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Dicranum scoparium	DICSCO	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Distichium flexicaule	DITFLE	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Drepanocladus uncinatus	DREUNC	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Eurhynchium pulchellum	EURPUL	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Hylocomium splendens	HYLSPL	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Orthodicranum flagellare	ORTFLA	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Plagiothecium sendtneri	PLASEN	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Pohlia nutans	POHNUT	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Polytrichum juniperinum	POLJUN	15	13.33	0.0013	0.000	0.001	0.817	-0.0	0.01
Polytrichum pilifarum	POLPIL	15	60.00	0.1300	0.240	0.063	0.858	-0.0	0.01
Ptilidium ciliare	PTICIL	15	0.0	0.0	0.0	0.0	0.0	-0.0	1.00
Ptilidium pulcherrimum	PTIPUL	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Ptilium crista-castrensis	PTICC	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Sphagnum spp	SPLSPP	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Tetraplodon angustatus	TETANG	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Tomenthypnum nitens	TOMNIT	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cetraria cucullata	CETCUC	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cetraria ericetorum	CETERI	15	100.00	0.2140	0.330	0.083	0.386	-0.0	1.00
Cetraria merrilli	CETMER	15	93.67	0.2067	0.030	0.010	0.411	-0.0	0.10
Cladina mitis	CLAMIT	15	100.00	78.3333	11.721	3.026	0.043	50.00	90.00
Cladina rangiferina	CLARAN	15	13.33	0.0013	0.004	0.001	0.861	-0.0	0.01
Cladina stellaris	CLASTE	15	100.00	0.4200	0.473	0.122	0.378	0.01	1.00
Cladonia amaurocraea	CLAAMA	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cladonia apodata	CLACAP	15	13.33	0.0013	0.004	0.001	0.861	-0.0	0.01
Cladonia apodocera	CLACAD	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cladonia asahinae	CLACAN	15	40.00	0.0040	0.005	0.001	0.327	-0.0	0.01
Cladonia asperella	CLAEML	15	73.33	0.1163	0.360	0.093	0.853	-0.0	0.01
Cladonia asperescens	CLAESC	15	46.67	0.0287	0.045	0.012	0.583	-0.0	0.10
Cladonia cariosa	CLACRN	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cladonia cervicornis	CLACER	15	93.33	0.2133	0.330	0.083	0.386	-0.0	1.00
Cladonia cervicornis	CLACRP	15	6.67	0.0007	0.003	0.001	1.000	-0.0	0.01
Cladonia cervicornis	CLACRT	15	93.33	0.0813	0.047	0.012	0.337	-0.0	0.10
Cladonia gracilis	CLAGRA	15	86.67	0.0327	0.042	0.011	0.333	-0.0	0.10
Cladonia multiformis	CLAMUL	15	93.33	0.3073	0.334	0.064	0.403	-0.0	1.00
Cladonia phyllophora	CLAPHY	15	86.67	0.7407	0.668	0.158	0.186	-0.0	1.00
Cladonia pyxidata	CLAPYX	15	93.33	0.1740	0.338	0.087	0.503	-0.0	1.00
Cladonia squamosa	CLASQU	15	13.33	0.0013	0.004	0.001	0.861	-0.0	0.01
Cladonia subulata	CLASUB	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cladonia uncialis	CLAUNC	15	6.67	0.0007	0.003	0.001	1.000	-0.0	0.01
Cladonia verticillata	CLAVER	15	73.33	0.2140	0.573	0.148	0.671	-0.0	2.00
Lecidea granulosa	LECGRA	15	6.67	0.0007	0.003	0.001	1.000	-0.0	0.01
Peltigera aphtosa	PELAPH	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Peltigera malacea	PELMAL	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Peltigera pulverulenta	PELPUL	15	66.67	0.3133	1.072	0.277	0.349	-0.0	4.00
Peltigera rufescens	PELRUF	15	6.67	0.0007	0.003	0.001	1.000	-0.0	0.01
Stereocaulon alpinum	STEALP	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Bryoria spp	BRYSPP	15	100.00	0.0100	0.0	0.0	0.0	-0.0	0.01
Cetraria halei	CETHAL	15	100.00	0.0100	0.033	0.008	0.378	-0.0	0.01
Cetraria pinastri	CETPIN	15	100.00	0.0400	0.065	0.013	0.258	-0.0	0.10
Evernia mesomorpha	EVEMES	15	100.00	0.0100	0.0	0.0	0.0	-0.0	0.01
Hypogymnia physodes	HYPPHY	15	100.00	0.0400	0.054	0.011	0.283	-0.0	0.10
Parmelia elegantula	PARELE	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Parmelia sulcata	PARSUL	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Parmeliopsis ambigua	PARAMB	15	93.33	0.1773	0.337	0.087	0.491	-0.0	1.00
Parmeliopsis hyperopta	PARHYP	15	93.33	0.0213	0.033	0.008	0.388	-0.0	0.10
Platismatia glauca	PLAGLA	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Usnea spp	USNSPP	15	100.00	0.0100	0.0	0.0	0.0	0.01	0.01

BASED ON 33 POSITIVE MEANS SIMPSON'S INDEX OF DOMINANCE CONCENTRATION, C = 0.899
SHANNON-WEAVER INDEX OF DIVERSITY, H' = 0.333 (NATURAL LOGS)

33 OF THE 82 VARIABLES HAVE POSITIVE MEANS, WHICH SUM TO 94.1783

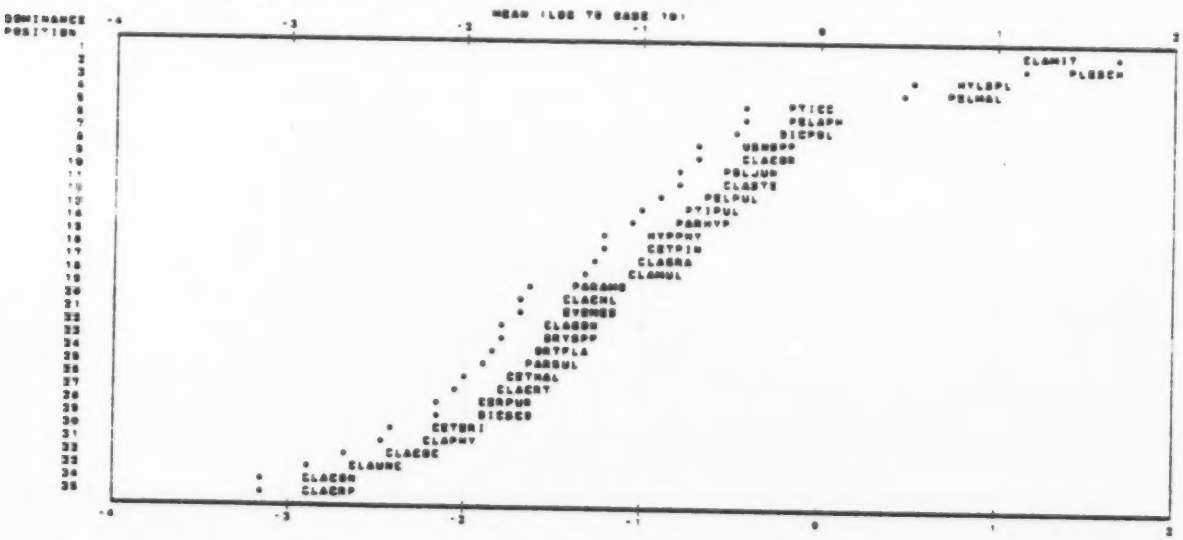


ARMSCOSS Oil Sands Ecological Monitoring August 1983 Surveys 04/02/83 PAGE 39
Descriptive Statistics for Each Species Variable and Each Stand
FILE ARMSCOSS (CREATION DATE = 04/02/83) Division Stand Tables of 1983 Shrub Cover % Data (20m2)
SUBFILE ENV

LABEL	VARIABLE	N	PRES %	MEAN	STD DEV	STD ERR	STD DEV /MEAN	MINIMUM	MAXIMUM
Aulacomnium palustre	AULPAL	15	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Brachythecium salebrosum	BRASAL	15	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Campylium hirpurnus	CAMPUR	15	6.67	0.0007	0.026	0.007	1.000	0.0	0.10
Dicranum polysetum	DICPOL	15	66.67	0.2207	0.435	0.110	0.343	0.0	1.00
Dicranum scoparium	DICSCO	15	6.67	0.0067	0.026	0.007	1.000	0.0	0.10
Distichium flexicaule	DITFLE	15	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Drepanocladus uncinatus	DRPUNC	15	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Eurhynchium pulchellum	EURPUL	15	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Hylocomium splendens	HYLSPL	15	80.00	3.2167	5.437	1.403	0.436	0.0	20.00
Orthodicranum flagellare	ORTFLA	15	20.00	0.0160	0.026	0.006	0.026	0.0	0.10
Pleurozium schreberi	PLESCH	15	100.00	14.2673	15.439	3.017	0.337	0.01	60.00
Ponlia nutans	PONNUT	15	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Polytrichum juniperinum	POLJUN	15	73.33	0.1700	0.266	0.131	0.792	0.0	1.00
Polytrichum piliferum	POLPIL	15	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pohlia cilliata	PTICIL	15	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ptilidium pulcherrimum	PTIPUL	15	60.00	0.1020	0.203	0.065	0.830	0.0	1.00
Ptilium crista-castrensis	PTICC	15	66.67	0.2613	0.602	0.155	0.631	0.0	2.00
Splachnum sp.	SPLSPP	15	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Tetraplodon angustatus	TETANG	15	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Tomenthypnum nitens	TOMNIT	15	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cetraria cucullata	CETCUC	15	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cetraria ericetorum	CETERI	15	46.67	0.0040	0.006	0.001	0.327	0.0	0.01
Cetraria nivalis	CETNIV	15	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cladina mitis	CLAMIT	15	100.00	50.6000	32.586	8.394	0.739	3.00	80.00
Cladina rangiferina	CLARAN	15	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cladina stellaris	CLASTE	15	33.33	0.1033	0.260	0.068	0.663	0.0	1.00
Cladonia amaurocraea	CLAAMA	15	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cladonia cenotea	CLACAP	15	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cladonia cornuta	CLACAR	15	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cladonia coniocraea	CLACEN	15	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cladonia chlorophaea	CLACHL	15	60.67	0.0307	0.032	0.008	0.405	0.0	0.10
Cladonia coccifera	CLACOC	15	26.78	0.0030	0.006	0.001	0.535	0.0	0.01
Cladonia coniocraea	CLACON	15	6.67	0.0007	0.003	0.001	0.535	0.0	0.01
Cladonia cornuta	CLACOR	15	100.00	1.1000	0.338	0.085	0.433	0.01	1.00
Cladonia cristata	CLACRP	15	6.67	0.0007	0.003	0.001	0.000	0.0	0.01
Cladonia cristatella	CLACRT	15	26.67	0.0067	0.026	0.007	0.783	0.0	0.01
Cladonia gonecha	CLAGON	15	60.67	0.0187	0.024	0.006	0.535	0.0	0.10
Cladonia grayi	CLAGRA	15	60.00	0.0060	0.040	0.013	0.235	0.0	0.10
Cladonia multiformis	CLAMUL	15	53.33	0.0513	0.047	0.013	0.237	0.0	0.10
Cladonia phyllophora	CLAPHY	15	33.33	0.0033	0.008	0.001	0.376	0.0	0.01
Cladonia pyxidata	CLAPYX	15	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cladonia squamosa	CLASQU	15	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cladonia subulata	CLASUB	15	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cladonia uncialis	CLAUNC	15	13.33	0.0013	0.004	0.001	0.661	0.0	0.01
Cladonia verticillata	CLAVER	15	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lecidea granulosa	LECGRA	15	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Peltigera aphthosa	PELAPH	15	53.33	0.3000	0.603	0.156	0.633	0.0	2.00
Peltigera malacea	PELMAL	15	93.33	2.0333	2.031	0.670	0.232	0.0	10.00
Peltigera pulverulenta	PELPUL	15	6.67	0.1333	0.516	0.133	1.000	0.0	2.00
Peltigera rufescens	PELRUF	15	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Stereocaulon alpinum	STEALP	15	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Bryoria spp.	BRYSPP	15	100.00	0.9160	0.833	0.086	0.376	0.01	0.10
Cetraria halei	CETHAL	15	100.00	0.0160	0.026	0.006	0.376	0.01	0.10
Cetraria pinastri	CETPIN	15	100.00	0.0160	0.026	0.006	0.376	0.01	0.10
Evernia mesomorpha	EVEMES	15	86.67	0.0520	0.046	0.012	0.307	0.01	0.10
Hypogymnia physodes	HYPPHY	15	86.67	0.0307	0.032	0.008	0.405	0.01	0.10
Parmelia olivacea	PAROLI	15	100.00	0.0560	0.048	0.012	0.184	0.01	0.10
Parmelia sulcata	PARSUL	15	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Parmeliopsis ambigua	PARAMB	15	80.00	0.0130	0.025	0.006	0.536	0.0	0.10
Parmeliopsis hyperopta	PARHYP	15	100.00	0.0220	0.032	0.008	0.372	0.01	0.10
Platismatia glauca	PLAGLA	15	100.00	0.0040	0.253	0.065	0.506	0.01	1.00
Usnea spp.	USNSPP	15	100.00	0.3020	0.330	0.084	0.417	0.01	1.00

BASED ON 35 POSITIVE MEANS SIMPSON'S INDEX OF DOMINANCE CONCENTRATION C = 0.511
SHANNON-WEAVER INDEX OF DIVERSITY. H' = 1.049 (NATURAL LOGS)

35 OF THE 52 VARIABLES HAVE POSITIVE MEANS, WHICH SUM TO 74.3033

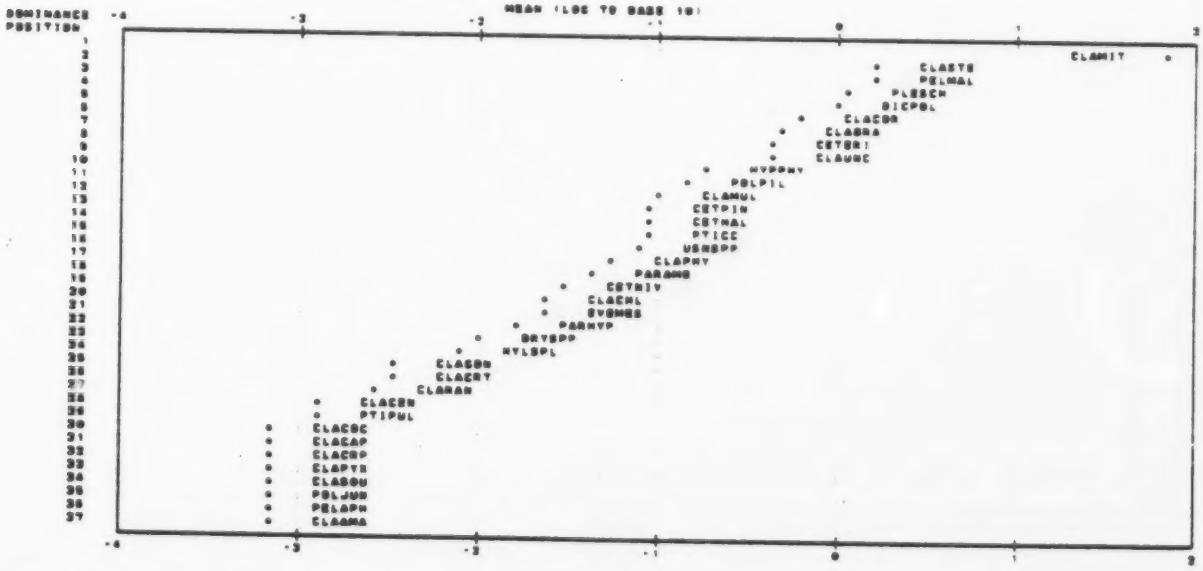


Athabasca Oil Sands Ecological Monitoring August 1983 Surveys 04/02/83 PAGE 30
Descriptive Statistics for Each Species Variable and Each Stand
FILE A8303020 (CREATION DATE = 04/02/83) Sixteen Stand Tables of 1983 Bryoid Cover % Data (25m2)
SUBFILE ALL

LABEL	VARIABLE	N	PRES %	MEAN	STD DEV	STD ERR	STD DEV /MEAN	MINIMUM	MAXIMUM
Aulacomnium palustre	AULPAL	16	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Brachythecium salebrosum	BRASAL	16	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Ceratodon purpureus	CERPUR	16	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Dicranum polysetum	DICPOL	16	93.33	0.9833	0.976	0.176	0.183	-0.0	3.00
Dicranum scoparium	DICSCO	16	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Distichium flexicaule	DITFLE	16	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Drepanocladus uncinatus	DREUNC	16	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Eurhynchium pulchellum	EURPUL	16	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Hylocomium splendens	HYLSPL	16	20.00	0.0688	0.038	0.007	0.335	-0.0	0.10
Brachythecium plicatiforme	BRYPLA	16	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Pleurozium schreberi	PLESCH	16	86.67	1.0867	1.011	0.201	0.340	-0.0	3.00
Ponnia nutans	PONNUT	16	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Polytrichum juniperinum	POLJUN	16	6.67	0.0067	0.063	0.001	1.000	-0.0	0.01
Polytrichum piliferum	POLPIL	16	26.67	0.1467	0.248	0.050	0.513	-0.0	1.00
Ptilidium ciliare	PTICIL	16	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Ptilidium pulcherrimum	PTIPUL	16	13.33	0.0013	0.004	0.001	0.831	-0.0	0.01
Ptilium crista-castrensis	PTICC	16	40.00	0.0800	0.268	0.068	0.750	-0.0	1.00
Solorinum spp	SPLSPP	16	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Tetraplodon angustatus	TETANG	16	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Tomenthypnum nitens	TOMNIT	16	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cetraria cucullata	CETCUC	16	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cetraria orbata	CETORI	16	100.00	0.4640	0.462	0.116	0.993	-0.0	1.00
Cetraria nivalis	CETNIV	16	53.33	0.0893	0.064	0.011	0.398	-0.0	1.00
Cladina mitis	CLAMIT	16	100.00	79.3333	8.121	2.007	0.030	50.00	88.00
Cladina rangiferina	CLARAN	16	26.67	0.0027	0.005	0.001	0.442	-0.0	0.01
Cladina stellaris	CLASTE	16	100.00	1.0133	1.184	0.301	0.188	0.10	3.00
Cladonia amaurocraea	CLAAMA	16	6.67	0.0067	0.063	0.001	1.000	-0.0	0.01
Cladonia capitata	CLACAP	16	6.67	0.0067	0.063	0.001	1.000	-0.0	0.01
Cladonia carneola	CLACAR	16	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cladonia cenotea	CLACEN	16	13.33	0.0013	0.004	0.001	0.831	-0.0	0.01
Cladonia chlorophaea	CLACHL	16	80.00	0.0240	0.040	0.010	0.438	-0.0	0.10
Cladonia coccifera	CLACOC	16	6.67	0.0067	0.063	0.001	1.000	-0.0	0.01
Cladonia conicraea	CLACON	16	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cladonia cornuta	CLACOR	16	100.00	0.8473	0.898	0.180	0.378	-0.0	3.00
Cladonia crispata	CLACRP	16	6.67	0.0067	0.063	0.001	1.000	-0.0	0.01
Cladonia cristatella	CLACRY	16	33.33	0.0033	0.006	0.001	0.866	-0.0	0.01
Cladonia gonecha	CLAGON	16	33.33	0.0033	0.006	0.001	0.866	-0.0	0.01
Cladonia gracilis	CLAGRA	16	100.00	0.4587	0.586	0.182	0.338	0.10	3.00
Cladonia multiformis	CLAMUL	16	46.67	0.0867	0.254	0.088	0.854	-0.0	0.10
Cladonia phyllophora	CLAPHY	16	73.33	0.0853	0.060	0.013	0.231	-0.0	0.10
Cladonia pyxidata	CLAPYX	16	6.67	0.0067	0.063	0.001	1.000	-0.0	0.01
Cladonia squamosa	CLASQU	16	6.67	0.0067	0.063	0.001	1.000	-0.0	0.01
Cladonia subulata	CLASUB	16	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cladonia uncialis	CLAUNC	16	100.00	0.4360	0.478	0.123	0.283	-0.0	1.00
Cladonia verticillata	CLAVER	16	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Loxicoa granulosa	LEGGRA	16	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Peltigera aphtosa	PELAPH	16	6.67	0.0067	0.063	0.001	1.000	-0.0	0.01
Peltigera malacea	PELMAL	16	100.00	1.0133	0.885	0.239	0.142	0.10	3.00
Peltigera pulverulenta	PELPUL	16	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Peltigera rufescens	PELRUF	16	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Stereocaulon alpinum	STEALP	16	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Bryoria spp	BRYSPP	16	100.00	0.0100	0.0	0.0	0.0	0.01	0.01
Cetraria halei	CETHAL	16	100.00	0.0050	0.354	0.088	0.766	0.01	1.00
Cetraria pinastri	CETPIN	16	100.00	0.0040	0.353	0.088	0.886	0.01	1.00
Evernia mesomorpha	EVEMES	16	100.00	0.0330	0.033	0.008	0.373	0.01	0.10
Hypogymnia physodes	HYPPHY	16	100.00	0.1760	0.337	0.067	0.488	0.01	1.00
Parmelia olegantula	PARELE	16	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Parmelia sulcata	PARSUL	16	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Parmeliopsis ambigua	PARAMB	16	93.33	0.0453	0.048	0.012	0.384	-0.0	0.10
Parmeliopsis hyperopta	PARHYP	16	100.00	0.0150	0.033	0.008	0.378	0.01	0.10
Platismatia glauca	PLAGLA	16	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Usnea spp	USNSPP	16	100.00	0.0830	0.355	0.088	0.803	0.01	1.00

BASED ON 37 POSITIVE MEANS SIMPSON'S INDEX OF DOMINANCE CONCENTRATION, C = 0.802
SHANNON-WEAVER INDEX OF DIVERSITY, H' = 0.505 (NATURAL LOGS)

37 OF THE 82 VARIABLES HAVE POSITIVE MEANS, WHICH SUM TO 79.8027

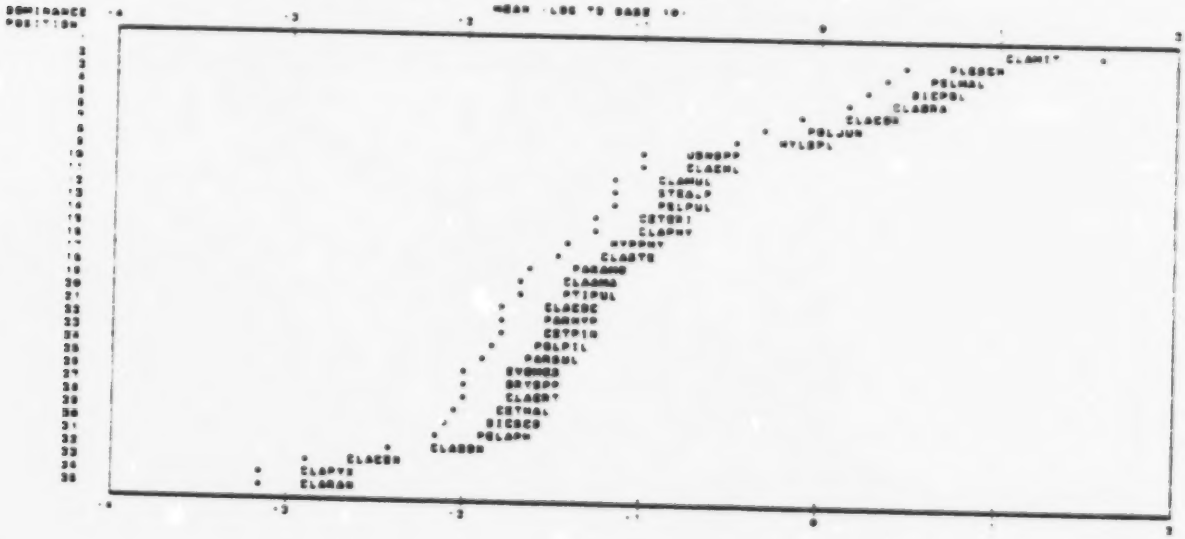


```
SYNOPSIS OF SOME ECOLOGICAL MONITORING  AUGUST 1983 SURVEYS                    04/03/83        PAGE   1
DESCRIPTIVE STATISTICS FOR SOME SPECIES VARIABLE AND SOME STORE
FILE   A0803030  (CREATION DATE = 04/03/83)   DIATOM STORE TABLES OF 1983 SPRING COVER % DATA (20m2)
SUBFILE   513
```

LABEL	VARIABLE	N	PROB %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
AULCAL	AULPAL	18	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BRASAL	BRASAL	18	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CAMPUM	CAMPUM	18	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CICPOL	CICPOL	18	100.00	1.0000	1.393	0.328	1.393	0.0	5.00
CICSCO	CICSCO	18	88.89	0.8889	1.355	0.319	1.524	0.0	5.00
CYCPLE	CYCPLE	18	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DIASUBC	DIASUBC	18	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EUNPUL	EUNPUL	18	0.0	0.0	0.0	0.0	0.0	0.0	0.0
HYLSPL	HYLSPL	18	44.44	0.3889	0.502	0.236	0.891	0.0	1.00
GRYPLA	GRYPLA	18	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PLSSCH	PLSSCH	18	66.67	2.9722	1.532	1.103	0.388	0.0	5.00
PSEDUY	PSEDUY	18	0.0	0.0	0.0	0.0	0.0	0.0	0.0
POLJUN	POLJUN	18	72.22	0.5013	0.955	0.225	0.452	0.0	3.00
POLPIL	POLPIL	18	38.89	0.8160	0.938	0.965	0.648	0.0	3.00
PTICIL	PTICIL	18	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PTIPUL	PTIPUL	18	38.89	0.3907	0.861	0.911	0.574	0.0	3.00
PTICE	PTICE	18	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SPLSPP	SPLSPP	18	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TETSAE	TETSAE	18	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TRIMIP	TRIMIP	18	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CRTCUC	CRTCUC	18	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CRTSRI	CRTSRI	18	72.22	0.9052	0.980	0.913	0.231	0.0	3.00
CRTRIP	CRTRIP	18	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CLAMIP	CLAMIP	18	100.00	25.5333	24.482	5.333	0.958	0.0	80.00
CLAMAR	CLAMAR	18	5.56	0.0007	0.003	0.001	1.000	0.0	0.01
CLASTE	CLASTE	18	83.33	0.0383	0.047	0.012	0.347	0.0	0.10
CLAMAM	CLAMAM	18	33.33	0.0313	0.041	0.011	0.495	0.0	0.10
CLACAP	CLACAP	18	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CLACAR	CLACAR	18	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CLACOR	CLACOR	18	72.22	0.9015	0.984	0.881	0.231	0.0	3.00
CLAEHL	CLAEHL	18	72.22	0.8972	0.953	0.865	0.672	0.0	3.00
CLAEDC	CLAEDC	18	44.44	0.3187	0.834	0.965	0.839	0.0	3.00
CLAEDO	CLAEDO	18	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CLAEDR	CLAEDR	18	83.33	0.7857	0.367	0.173	0.235	0.0	2.00
CLAERP	CLAERP	18	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CLAER7	CLAER7	18	44.44	0.9100	0.935	0.867	0.885	0.0	3.00
CLAGRA	CLAGRA	18	44.44	0.9600	0.968	0.881	0.327	0.0	3.00
CLAHUL	CLAHUL	18	100.00	1.2300	0.878	0.237	0.189	0.10	3.00
CLAPHY	CLAPHY	18	72.22	0.8733	0.948	0.913	0.181	0.0	3.00
CLAPYX	CLAPYX	18	5.56	0.0833	0.350	0.013	0.231	0.0	0.10
CLASOU	CLASOU	18	0.0	0.0007	0.003	0.001	1.000	0.0	0.01
CLASUB	CLASUB	18	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CLAUNE	CLAUNE	18	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CLAVER	CLAVER	18	0.0	0.0	0.0	0.0	0.0	0.0	0.0
LEUSRA	LEUSRA	18	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PELAPH	PELAPH	18	5.56	0.0007	0.003	0.001	1.000	0.0	0.01
PELHAL	PELHAL	18	83.33	2.4133	1.338	0.315	0.327	0.0	5.00
PELPUL	PELPUL	18	5.56	0.0057	0.356	0.057	1.000	0.0	0.06
PELRUP	PELRUP	18	0.0	0.0	0.0	0.0	0.0	0.0	0.0
STEALP	STEALP	18	5.56	0.0057	0.356	0.057	1.000	0.0	0.06
SKYSPP	SKYSPP	18	100.00	0.0100	0.0	0.0	0.0	0.0	0.0
CRTHAL	CRTHAL	18	83.33	0.0883	0.043	0.001	0.077	0.0	0.01
CRTPIG	CRTPIG	18	100.00	0.0100	0.023	0.006	0.378	0.0	0.01
SYNNOB	SYNNOB	18	100.00	0.0100	0.0	0.0	0.0	0.0	0.0
HYPPHY	HYPPHY	18	100.00	0.0600	0.044	0.011	0.183	0.0	0.01
PARGLE	PARGLE	18	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PARSUL	PARSUL	18	88.89	0.8139	0.935	0.908	0.535	0.0	3.00
PARANG	PARANG	18	100.00	0.8329	0.932	0.908	0.372	0.0	3.00
PARHYP	PARHYP	18	100.00	0.8100	0.933	0.908	0.375	0.0	3.00
PLAGLA	PLAGLA	18	0.0	0.0	0.0	0.0	0.0	0.0	0.0
UNKSPP	UNKSPP	18	100.00	0.1000	0.251	0.065	0.612	0.01	1.00

BASED ON 36 POSITIVE MEANS SIMPSON'S INDEX OF DOMINANCE CONCENTRATION C = 0.616
SHANNON-WEAVER INDEX OF DIVERSITY H' = 0.907 (NATURAL LOGS)

 35 OF THE 63 VARIABLES HAVE POSITIVE MEANS, WHICH SUM TO 59.7972

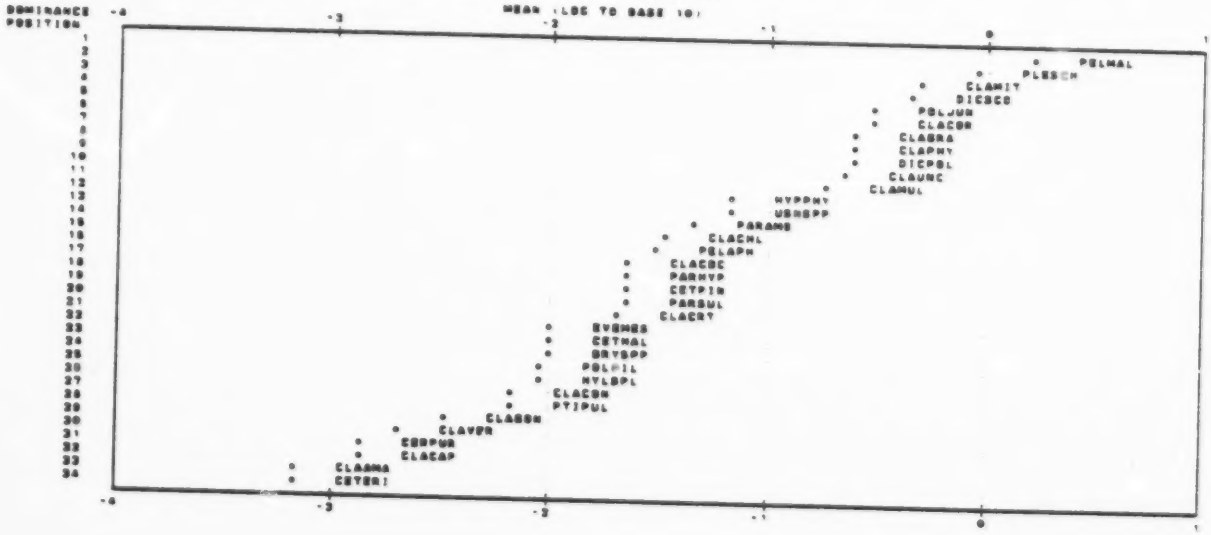


Athabasca Oil Sands Ecological Monitoring August 1982 Surveys
Descriptive Statistics for Each Species Variable and Each Stand 04/02/83 PAGE 32
FILE ABS82029 (CREATION DATE = 04/02/83) Bitumen Stand Tables of 1982 Bryoid Cover % Data (25m2)
SUBFILE 316

LABEL	VARIABLE	N	PRES %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Aulacomnium palustre	AULPAL	18	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Brachythecium salebrosum	BRASAL	18	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Ceratodon purpureus	CERPUR	18	11.33	0.0013	0.004	0.001	0.581	-0.0	0.01
Dicranum polysetum	DICPOL	18	72.33	0.2383	0.386	0.193	0.437	-0.0	1.00
Dicranum scoparium	DICSCO	18	72.33	0.4413	0.893	0.230	0.522	-0.0	3.00
Ditrichum flexicaule	DITFLE	18	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Drepanocladus uncinatus	DREUNC	18	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Eurhynchium pulchellum	EURPUL	18	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Hylocomium splendens	HYLSPL	18	38.67	0.0087	0.030	0.007	0.783	-0.0	0.10
Orthodicranum flagellare	ORTFLA	18	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Pleurozium schreberi	PLESCH	18	83.33	0.0333	0.103	0.390	0.332	-0.0	0.50
Pohlia nutans	POHNUT	18	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Polytrichum juniperinum	POLJUN	18	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Polytrichum strictum	POLPIL	18	50.00	0.3167	0.572	0.148	0.470	-0.0	2.00
Ptilidium ciliare	PTICIL	18	33.33	0.0093	0.026	0.007	0.705	-0.0	0.10
Ptilidium pulcherrimum	PTIPUL	18	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Ptilium crista-castrensis	PTICC	18	5.67	0.0087	0.026	0.007	1.000	-0.0	0.10
Splachnum spp	SPLSPP	18	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Tetraplodon angustatus	TETANG	18	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Tomenthypnum nitens	TOMNIT	18	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cetraria cucullata	CETCUC	18	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cetraria ericetorum	CETERI	18	5.67	0.0067	0.003	0.001	1.000	-0.0	0.01
Cetraria nivalis	CETNIV	18	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cladina arbuscula	CLAMIT	18	100.00	0.4539	0.982	0.233	0.474	-0.0	3.00
Cladina rangiferina	CLARAN	18	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cladina stellaris	CLASTE	18	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cladonia amaurocraea	CLAAMA	18	5.67	0.0067	0.003	0.001	1.000	-0.0	0.01
Cladonia capitata	CLACAP	18	11.33	0.0013	0.004	0.001	0.581	-0.0	0.01
Cladonia cariosa	CLACAR	18	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cladonia cenotea	CLACEN	18	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cladonia chlorophaea	CLACHL	18	88.00	0.2230	0.043	0.011	0.344	-0.0	0.50
Cladonia coccifera	CLACOC	18	45.67	0.0227	0.040	0.010	0.488	-0.0	0.10
Cladonia coniocraea	CLACON	18	5.67	0.0067	0.028	0.007	1.000	-0.0	0.10
Cladonia crispata	CLACRI	18	72.33	0.2383	0.445	0.110	0.387	-0.0	1.00
Cladonia cristatella	CLACRY	18	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cladonia gonecha	CLAGON	18	72.33	0.6193	0.933	0.098	0.441	-0.0	0.10
Cladonia gracilis	CLAGRA	18	33.33	0.0033	0.006	0.001	0.378	-0.0	0.01
Cladonia multiformis	CLAMUL	18	83.33	0.2493	0.391	0.101	0.405	-0.0	1.00
Cladonia phyllophora	CLAPHY	18	83.33	0.1633	0.334	0.086	0.471	-0.0	1.00
Cladonia pyxidata	CLAPYX	18	72.33	0.2383	0.398	0.103	0.437	-0.0	1.00
Cladonia squamosa	CLASQU	18	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cladonia subulata	CLASUB	18	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cladonia uncialis	CLAUNC	18	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cladonia verticillata	CLAVER	18	83.33	0.2260	0.552	0.143	0.631	-0.0	2.00
Lecidea granulosa	LECGRA	18	38.00	0.0020	0.004	0.001	0.538	-0.0	0.01
Peltigera aphthosa	PELAPH	18	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Peltigera malacea	PELMAL	18	45.67	0.0367	0.045	0.012	0.403	-0.0	0.10
Peltigera pulverulenta	PELPUL	18	100.00	1.5733	1.035	0.267	0.180	0.10	4.00
Peltigera rufescens	PELRUF	18	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Stereocaulon alpinum	STEALP	18	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Bryoria spp	BRYSPP	18	100.00	0.0100	0.0	0.0	0.0	-0.0	-0.0
Cetraria halei	CETHAL	18	100.00	0.0100	0.0	0.0	0.0	0.01	0.01
Cetraria sinuosa	CETPIN	18	100.00	0.0220	0.032	0.008	0.372	0.01	0.10
Evernia mesomorpha	EVEMES	18	100.00	0.0100	0.0	0.0	0.0	0.01	0.01
Hypogymnia physodes	HYPPHY	18	100.00	0.0640	0.048	0.012	0.184	0.01	0.10
Parmelia elegantula	PARELE	18	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Parmelia sulcata	PARSUL	18	83.33	0.0212	0.032	0.008	0.388	-0.0	0.10
Parmeliopsis ambigua	PARAMB	18	100.00	0.0460	0.045	0.012	0.268	0.01	0.10
Parmeliopsis hyperopta	PARHYP	18	100.00	0.0220	0.032	0.008	0.372	0.01	0.10
Platismatia glauca	PLAGLA	18	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Usnea spp	USNSPP	18	100.00	0.0640	0.048	0.012	0.184	0.01	0.10

BASED ON 34 POSITIVE MEANS SIMPSON'S INDEX OF DOMINANCE CONCENTRATION, C = 0.161
SHANNON-WEAVER INDEX OF DIVERSITY, H' = 2.403 (NATURAL LOGS)

34 OF THE 63 VARIABLES HAVE POSITIVE MEANS, WHICH SUM TO 5.5000

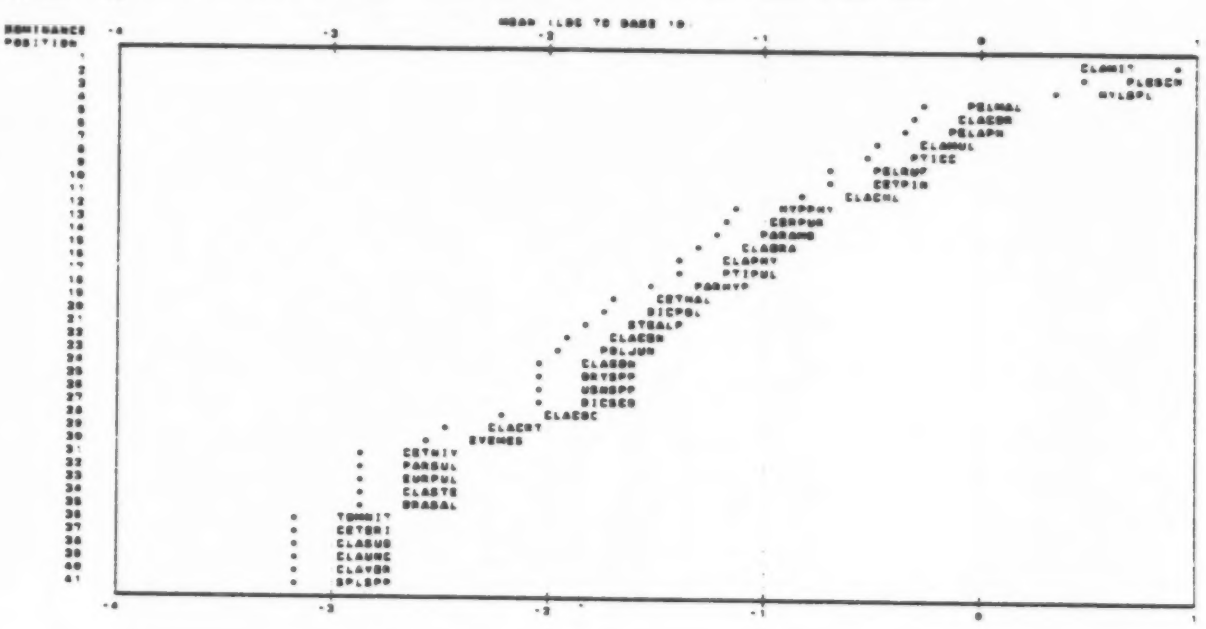


ARMBRUSTER Bill Samoa Ecological Monitoring August 1992 Surveys 04/02/93 PAGE 33
Descriptive Statistics for Each Species Variable and Each Stand
FILE A0502026 (CREATION DATE = 04/02/93) Station Stems Tables of 1992 Bryoid Cover % Data (25m2)
SUBFILE STS

LABEL	VARIABLE	N	PRES %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	minimum	maximum
Aulacomnium palustre	AULPAL	15	0 0	0 0	0 0	0 0	0 0	-0 0	-0 0
Breutelia pallescens	BRAPAL	15	13 33	0 0013	0 004	0 001	0 001	-0 0	0 01
Ceratodon purpureus	CERPUR	15	13 33	0 0073	0 286	0 007	0 980	-0 0	1 00
Dicranum polysetum	DICPOL	15	80 00	0 0180	0 024	0 006	0 482	-0 0	0 10
Dicranum scoparium	DICSCO	15	26 67	0 0067	0 026	0 007	0 763	-0 0	0 10
Dicranum fuscescens	DICFUS	15	0 0	0 0	0 0	0 0	0 0	-0 0	-0 0
Drepanocladus uncinatus	DRPUNC	15	0 0	0 0	0 0	0 0	0 0	-0 0	-0 0
Eurhynchium oreganum	EURPOL	15	13 33	0 0013	0 004	0 001	0 001	-0 0	0 01
Hylocomium splendens	HYLSPL	15	93 33	3 2080	1 735	0 883	0 837	-0 0	15 00
Orthodicranum flagellare	ORTFLA	15	0 0	0 0	0 0	0 0	0 0	-0 0	-0 0
Pleurozium schreberi	PLESCH	15	100 00	3 8667	2 437	0 630	0 284	0 10	8 00
Ponetia nutans	PONNUT	15	0 0	0 0	0 0	0 0	0 0	-0 0	-0 0
Polytrichum juniperinum	POLJUN	15	93 33	0 5113	0 035	0 006	0 070	-0 0	0 10
Polytrichum piliferum	POLPIL	15	0 0	0 0	0 0	0 0	0 0	-0 0	-0 0
Ptilidium ciliare	PTICIL	15	0 0	0 0	0 0	0 0	0 0	-0 0	-0 0
Ptilidium pulcherrimum	PTIPUL	15	80 00	0 0430	0 040	0 010	0 382	-0 0	0 10
Ptilium crista-castrensis	PTICC	15	80 00	0 3680	0 434	0 112	0 304	-0 0	1 00
Sphagnum spp.	SPLSPP	15	6 67	0 0067	0 003	0 001	1 000	-0 0	0 01
Tetraphodon angustatus	TETANG	15	0 0	0 0	0 0	0 0	0 0	-0 0	-0 0
Tomenthypnum nitens	TOMNIT	15	6 67	0 0067	0 003	0 001	1 000	-0 0	0 01
Cetraria cucullata	CETCUC	15	6 67	0 0067	0 003	0 001	1 000	-0 0	0 01
Cetraria orbata	CETORB	15	0 0	0 0	0 0	0 0	0 0	-0 0	-0 0
Cetraria nivalis	CETNIV	15	6 67	0 0067	0 003	0 001	1 000	-0 0	0 01
Cladina mitis	CLAMIT	15	13 33	0 0013	0 004	0 001	0 001	-0 0	0 01
Cladina rangiferina	CLARAN	15	100 00	0 8747	0 516	0 133	0 152	-0 0	2 00
Cladina stellaris	CLASTE	15	0 0	0 0	0 0	0 0	0 0	-0 0	-0 0
Cladonia amaurocraea	CLAAMA	15	13 33	0 0013	0 004	0 001	0 001	-0 0	0 01
Cladonia apodeta	CLAAPO	15	0 0	0 0	0 0	0 0	0 0	-0 0	-0 0
Cladonia asperella	CLAASP	15	0 0	0 0	0 0	0 0	0 0	-0 0	-0 0
Cladonia asperella	CLAASP	15	0 0	0 0	0 0	0 0	0 0	-0 0	-0 0
Cladonia bellidiflora	CLABEL	15	0 0	0 0	0 0	0 0	0 0	-0 0	-0 0
Cladonia botrytes	CLABOT	15	80 00	0 0120	0 035	0 009	0 335	-0 0	0 10
Cladonia cariosa	CLACAR	15	33 33	0 1480	0 515	0 133	0 350	-0 0	2 00
Cladonia carneola	CLACAE	15	60 00	0 0060	0 005	0 001	0 218	-0 0	0 01
Cladonia carneola	CLACAR	15	0 0	0 0	0 0	0 0	0 0	-0 0	-0 0
Cladonia cornuta	CLACOR	15	93 33	0 5140	0 804	0 186	0 363	-0 0	2 00
Cladonia crispata	CLACRP	15	0 0	0 0	0 0	0 0	0 0	-0 0	-0 0
Cladonia cristatella	CLACRT	15	33 33	0 0033	0 005	0 001	0 378	-0 0	0 01
Cladonia gonecha	CLAGON	15	33 33	0 0053	0 005	0 001	0 268	-0 0	0 01
Cladonia gracilis	CLAGRA	15	80 00	0 0800	0 040	0 010	0 281	-0 0	0 10
Cladonia multiformis	CLAMUL	15	100 00	0 3360	0 410	0 107	0 322	-0 0	1 00
Cladonia phyllophora	CLAPHY	15	66 67	0 0427	0 040	0 010	0 294	-0 0	0 10
Cladonia pyxidata	CLAPYX	15	0 0	0 0	0 0	0 0	0 0	-0 0	-0 0
Cladonia sekomoea	CLASEK	15	0 0	0 0	0 0	0 0	0 0	-0 0	-0 0
Cladonia subulata	CLASUB	15	0 0	0 0	0 0	0 0	0 0	-0 0	-0 0
Cladonia uncialis	CLAUNC	15	6 67	0 0067	0 003	0 001	1 000	-0 0	0 01
Cladonia verticillata	CLAVER	15	6 67	0 0067	0 003	0 001	1 000	-0 0	0 01
Lecidea granulosa	LECGRA	15	0 0	0 0	0 0	0 0	0 0	-0 0	-0 0
Peltigera aphthosa	PELAPH	15	66 67	0 1240	0 115	0 030	0 931	-0 0	0 10
Peltigera malacea	PELMAL	15	46 67	0 0333	0 040	0 103	0 210	-0 0	2 00
Peltigera pulverulenta	PELPUL	15	0 0	0 0	0 0	0 0	0 0	-0 0	-0 0
Peltigera rufescens	PELRUF	15	40 67	0 2027	0 410	0 106	0 506	-0 0	1 00
Stereocaulon alpinum	STEALP	15	26 67	0 0147	0 026	0 007	0 173	-0 0	0 10
Bryoria spp.	BRYSPP	15	66 67	0 0067	0 004	0 001	0 105	-0 0	0 01
Cetraria nigricans	CETNIG	15	66 67	0 0307	0 032	0 008	0 255	-0 0	0 10
Evernia mesomorpha	EVEMES	15	100 00	0 3020	0 336	0 004	0 417	-0 0	1 00
Hypogymnia physodes	HYPPHY	15	26 67	0 0027	0 006	0 001	0 443	-0 0	0 01
Parmelia elegantula	PARELE	15	93 33	0 0793	0 042	0 011	0 145	-0 0	0 10
Parmelia sulcata	PARSUL	15	0 0	0 0	0 0	0 0	0 0	-0 0	-0 0
Parmeliopsis ambigua	PARAMB	15	13 33	0 0013	0 004	0 001	0 001	-0 0	0 01
Parmeliopsis hyperopta	PARHYP	15	66 67	0 0427	0 047	0 012	0 108	-0 0	0 10
Platismatia glauca	PLAGLA	15	73 33	0 0313	0 003	0 011	0 358	-0 0	0 10
Usnea spp.	USNSPP	15	0 0	0 0	0 0	0 0	0 0	-0 0	-0 0
	USNSPP	15	66 67	0 0667	0 004	0 001	0 105	-0 0	0 01

BASED ON 41 POSITIVE MEANS SIMPSON'S INDEX OF DOMINANCE CONCENTRATION C = 0 205
SHANNON-WEAVER INDEX OF DIVERSITY H' = 1 736 (NATURAL LOGS)

41 OF THE 82 VARIABLES HAVE POSITIVE MEANS, WHICH SUM TO 16 6393

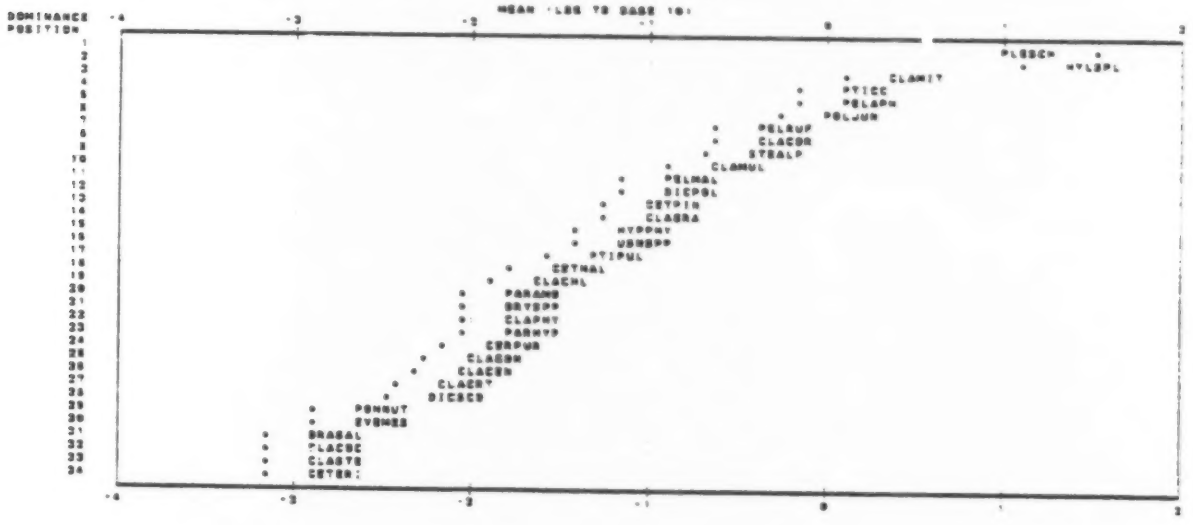

RANKABUNDANCE POSITION
MEAN (LOG TO BASE 10)
-4
-3
-2
-1
0
1
CLAMIT
PLEBEN
SYLSPL
PELMAL
CLAEGR
PELAPH
CLAMUL
PYICC
PELMEP
CRYPIN
CLACHL
HYPPHY
CERPUN
PARCAM
CLABRA
CLAPHY
PTIPUL
PARHYP
CRYMAL
DICPOL
SYNALP
CLAECH
POLJUN
CLABOO
ORTSPP
HYAPP
DICSEQ
CLAEBC
CLACRT
EVEMES
CRTMIY
PARSUL
EUNPUL
CLASTE
BRABAL
TOMMIT
CRTGRI
CLABUG
CLAUNC
CLAYBR
SPLSPP

ATMOSPHERE O:(Samoa Ecological Monitoring August 1992 Surveys 04/03/93 PAGE 35
Descriptive Statistics for Each Species variable and Each Stand
FILE A0592835 CREATION DATE = 04/03/93 Simpson Stand Tables of 1992 Bryoid Cover % Data (30m2)
SUBFILE 516

LABEL	VARIABLE	N	PROB %	MEAN	STD DEV	STD ERR	STD DEV /MEAN	MINIMUM	MAXIMUM
Aulacomnium palustre	AULPAL	15	0 0	0 0	0 0	0 0	0 0	-0 0	-0 0
Brachythecium salebrosum	BRASAL	15	0 07	0 0007	0 003	0 001	1 000	-0 0	0 01
Campylopus surfurous	CERPUR	15	0 07	0 0007	0 035	0 007	1 000	-0 0	0 13
Dicranum polysetum	DICPOL	15	73 33	0 0073	0 046	0 012	6 164	-0 0	0 17
Dicranum scoparium	DICSCO	15	93 33	0 0033	0 000	0 001	0 378	-0 0	0 01
Ditrichum flexicaule	DITFLE	15	0 0	0 0	0 0	0 0	0 0	-0 0	-0 0
Breutelia umbrosa	BREUMB	15	0 0	0 0	0 0	0 0	0 0	-0 0	-0 0
Surhynchium pulchellum	EURPUL	15	0 0	0 0	0 0	0 0	0 0	-0 0	-0 0
Hylocomium splendens	HYLSPL	15	100 00	12 6667	3 247	1 358	0 193	3 00	30 00
Hypnodendron flagellare	HYPFLA	15	0 0	0 0	0 0	0 0	0 0	-0 0	-0 0
Pleurozium schreberi	PLESCH	15	100 00	33 7333	21 439	5 533	0 634	3 00	83 00
Pohlia nutans	PONNUT	15	13 33	0 0013	0 004	0 001	0 387	-0 0	0 01
Polytrichum juniperinum	POLJUN	15	100 00	0 5763	0 206	0 206	0 353	0 01	3 00
Polytrichum pilliferum	POLPIL	15	0 0	0 0	0 0	0 0	0 0	-0 0	-0 0
Ptilidium ciliare	PTICIL	15	0 0	0 0	0 0	0 0	0 0	-0 0	-0 0
Ptilidium pulcherrimum	PTIPUL	15	40 00	0 0280	0 045	0 012	0 418	-0 0	0 13
Ptilium crista-castrensis	PTICC	15	66 67	0 7000	1 224	0 262	0 483	-0 0	3 00
Sphagnum spp	SPLSPP	15	0 0	0 0	0 0	0 0	0 0	-0 0	-0 0
Tetraplodon angustatus	TETANG	15	0 0	0 0	0 0	0 0	0 0	-0 0	-0 0
Tomenthypnum nitens	TOMNIT	15	0 0	0 0	0 0	0 0	0 0	-0 0	-0 0
Cotreria subulata	CETSUC	15	0 0	0 0	0 0	0 0	0 0	-0 0	-0 0
Cotreria orthotrum	CETORI	15	6 67	0 0007	0 003	0 001	1 000	-0 0	0 01
Cotreria nivalis	CETNIV	15	0 0	0 0	0 0	0 0	0 0	-0 0	-0 0
Cladina evoluta	CLAMIT	15	100 00	1 3313	1 133	0 293	0 327	0 01	3 00
Cladina rangiferina	CLARAN	15	0 0	0 0	0 0	0 0	0 0	-0 0	-0 0
Cladina stellaris	CLASTE	15	6 67	0 0007	0 003	0 001	1 000	-0 0	0 01
Cladonia abbuorrensa	CLAAMA	15	0 0	0 0	0 0	0 0	0 0	-0 0	-0 0
Cladonia capitata	CLACAP	15	0 0	0 0	0 0	0 0	0 0	-0 0	-0 0
Cladonia carroda	CLACAR	15	0 0	0 0	0 0	0 0	0 0	-0 0	-0 0
Cladonia cenotea	CLACEN	15	6 67	0 0067	0 006	0 001	0 388	-0 0	0 01
Cladonia chlorophaea	CLACHL	15	73 33	0 0133	0 034	0 009	0 472	-0 0	0 10
Cladonia coccifera	CLACOC	15	6 67	0 0007	0 003	0 001	1 000	-0 0	0 01
Cladonia coniocraea	CLACON	15	0 0	0 0	0 0	0 0	0 0	-0 0	-0 0
Cladonia cornuta	CLACOR	15	80 00	0 3300	0 481	0 103	0 458	-0 0	1 00
Cladonia crispata	CLACRP	15	0 0	0 0	0 0	0 0	0 0	-0 0	-0 0
Cladonia cristatella	CLACRT	15	60 00	0 0060	0 008	0 001	0 327	-0 0	0 01
Cladonia gonecha	CLAGEN	15	33 33	0 0053	0 008	0 001	0 350	-0 0	0 01
Cladonia gracilis	CLAGRA	15	80 00	0 0580	0 048	0 013	0 325	-0 0	0 16
Cladonia multiformis	CLAMUL	15	86 67	0 1367	0 208	0 063	0 451	-0 0	0 80
Cladonia phyllophora	CLAPHY	15	33 33	0 0053	0 020	0 007	0 708	-0 0	0 10
Cladonia pyxidata	CLAPYX	15	0 0	0 0	0 0	0 0	0 0	-0 0	-0 0
Cladonia squamosa	CLASQU	15	0 0	0 0	0 0	0 0	0 0	-0 0	-0 0
Cladonia subulata	CLASUB	15	0 0	0 0	0 0	0 0	0 0	-0 0	-0 0
Cladonia uncialis	CLAUNC	15	0 0	0 0	0 0	0 0	0 0	-0 0	-0 0
Cladonia verticillata	CLAVER	15	0 0	0 0	0 0	0 0	0 0	-0 0	-0 0
Leucobe granulosa	LEUGRA	15	0 0	0 0	0 0	0 0	0 0	-0 0	-0 0
Peltigera aphthosa	PELAPH	15	86 67	0 3860	0 784	0 183	0 384	-0 0	3 00
Peltigera malacea	PELMAL	15	73 33	0 0473	0 293	0 067	0 593	-0 0	3 00
Peltigera pulverulenta	PELPUL	15	0 0	0 0	0 0	0 0	0 0	-0 0	-0 0
Peltigera rufescens	PELRUF	15	86 67	0 3467	0 388	0 103	0 434	-0 0	1 00
Stereocaulon alpinum	STEALP	15	93 33	0 2193	0 497	0 108	0 488	-0 0	1 00
Bryoria spp	BRYSPP	15	93 33	0 0893	0 203	0 001	0 671	-0 0	0 01
Cetraria halei	CETHAL	15	93 33	0 0153	0 034	0 008	0 387	-0 0	0 10
Cetraria pinastri	CETPIN	15	93 33	0 0873	0 047	0 012	0 213	-0 0	0 10
Evernia mesomorpha	EVEMES	15	13 33	0 0013	0 004	0 001	0 351	-0 0	0 01
Hypogymnia physodes	HYPPHY	15	93 33	0 0393	0 044	0 011	0 283	-0 0	0 10
Parmelia elegantula	PARELE	15	0 0	0 0	0 0	0 0	0 0	-0 0	-0 0
Parmelia sulcata	PARSUL	15	0 0	0 0	0 0	0 0	0 0	-0 0	-0 0
Parmeliopsis ambigua	PARAMB	15	93 33	0 0093	0 003	0 001	0 371	-0 0	0 01
Parmeliopsis hyperopta	PARHYP	15	66 67	0 0067	0 004	0 001	0 196	-0 0	0 01
Platismatia glauca	PLAGLA	15	0 0	0 0	0 0	0 0	0 0	-0 0	-0 0
Usnea spp	USNSPP	15	93 33	0 0393	0 044	0 011	0 283	-0 0	0 10

BASED ON 34 POSITIVE MEANS SIMPSON'S INDEX OF DOMINANCE CONCENTRATION, C = 0 305
SHANNON-WEAVER INDEX OF DIVERSITY, H' = 1 827 (NATURAL LOGS)

34 OF THE 82 VARIABLES HAVE POSITIVE MEANS, WHICH SUM TO 90 9987



Athabasca Oil Sands Ecological Monitoring August 1982 Surveys 04/02/83 PAGE 37
Descriptive Statistics for Each Synthetic Variable
FILE A0582025 (CREATION DATE = 04/02/83) Sixteen Stand Tables of 1982 Bryoid Cover % Data (25m2)
SUBFILE 5016

LABEL	VARIABLE	N	FREQ %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Bryophyte Cover % per Plot	BRYOPHCV	15	100 00	7 9267	16 323	3 840	0 378	0 04	39 00
Bryophyte Spp Richness per Plot	BRYOPHRP	15	100 00	1 4000	0 828	0 214	0 183	1 00	4 00
Terr Lichen Cover % per Plot	LCHTERCV	15	100 00	10 4733	15 831	4 088	0 210	1 17	61 33
Terr Lichen Spp Richness per Plot	LCHTERRP	15	100 00	10 8333	3 209	0 828	0 084	0 00	14 00
Epiph Lichen Cover % per Plot	LCHEPICV	15	100 00	0 6853	2 661	0 651	0 817	0 01	10 00
Epiph Lichen Spp Richness per Plot	LCHEPIRP	15	100 00	2 9333	1 792	0 463	0 158	1 00	7 00
Lichen Cover % per Plot	LCHALLCV	15	100 00	30 2520	16 333	4 191	0 207	1 33	61 33
Lichen Spp Richness per Plot	LCHALLRP	15	100 00	13 4867	1 868	0 479	0 038	10 00	18 00
Cover % per Plot of All Spp	TOTALCV	15	100 00	37 2000	21 978	5 660	0 189	1 43	88 45
Richness per Plot of All Spp	TOTALRP	15	100 00	14 8867	1 887	0 487	0 031	11 00	17 00

Athabasca Oil Sands Ecological Monitoring August 1982 Surveys 04/02/83 PAGE 38
Descriptive Statistics for Each Synthetic Variable
FILE A0582025 (CREATION DATE = 04/02/83) Sixteen Stand Tables of 1982 Bryoid Cover % Data (25m2)
SUBFILE 5026

LABEL	VARIABLE	N	FREQ %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Bryophyte Cover % per Plot	BRYOPHCV	15	100 00	0 5467	0 833	0 183	0 399	0 01	2 11
Bryophyte Spp Richness per Plot	BRYOPHRP	15	100 00	2 4867	1 135	0 281	0 116	1 00	4 00
Terr Lichen Cover % per Plot	LCHTERCV	15	100 00	85 1866	5 831	1 484	0 017	73 44	91 83
Terr Lichen Spp Richness per Plot	LCHTERRP	15	100 00	11 1333	1 060	0 274	0 025	9 00	13 00
Epiph Lichen Cover % per Plot	LCHEPICV	15	100 00	0 6020	0 693	0 104	0 225	0 17	1 35
Epiph Lichen Spp Richness per Plot	LCHEPIRP	15	100 00	3 4000	0 507	0 131	0 038	3 00	5 00
Lichen Cover % per Plot	LCHALLCV	15	100 00	85 8428	5 605	1 447	0 017	73 81	91 83
Lichen Spp Richness per Plot	LCHALLRP	15	100 00	15 5333	1 060	0 274	0 014	17 00	21 00
Cover % per Plot of All Spp	TOTALCV	15	100 00	85 1883	5 780	1 485	0 017	72 74	92 00
Richness per Plot of All Spp	TOTALRP	15	100 00	23 0000	1 927	0 488	0 023	18 00	25 00

Athabasca Oil Sands Ecological Monitoring August 1982 Surveys 04/02/83 PAGE 39
Descriptive Statistics for Each Synthetic Variable
FILE A0582025 (CREATION DATE = 04/02/83) Sixteen Stand Tables of 1982 Bryoid Cover % Data (25m2)
SUBFILE 5036

LABEL	VARIABLE	N	FREQ %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Bryophyte Cover % per Plot	BRYOPHCV	15	100 00	11 8740	16 775	3 815	0 321	1 00	59 00
Bryophyte Spp Richness per Plot	BRYOPHRP	15	100 00	1 1333	0 352	0 091	0 080	1 00	2 00
Terr Lichen Cover % per Plot	LCHTERCV	15	100 00	7 1853	4 255	1 101	0 153	1 47	16 43
Terr Lichen Spp Richness per Plot	LCHTERRP	15	100 00	10 7333	1 438	0 371	0 033	8 00	13 00
Epiph Lichen Cover % per Plot	LCHEPICV	15	100 00	0 1333	0 073	0 018	0 142	0 05	0 25
Epiph Lichen Spp Richness per Plot	LCHEPIRP	15	100 00	0 7333	0 961	0 248	0 037	0 00	3 00
Lichen Cover % per Plot	LCHALLCV	15	100 00	7 3187	4 267	1 102	0 151	1 54	16 55
Lichen Spp Richness per Plot	LCHALLRP	15	100 00	17 4867	1 598	0 413	0 024	14 00	20 00
Cover % per Plot of All Spp	TOTALCV	15	100 00	19 1827	14 888	3 844	0 200	3 54	59 51
Richness per Plot of All Spp	TOTALRP	15	100 00	18 8000	1 605	0 412	0 022	18 00	21 00

Athabasca Oil Sands Ecological Monitoring August 1982 Surveys 04/02/83 PAGE 40
Descriptive Statistics for Each Synthetic Variable
FILE A0582025 (CREATION DATE = 04/02/83) Sixteen Stand Tables of 1982 Bryoid Cover % Data (25m2)
SUBFILE 5046

LABEL	VARIABLE	N	FREQ %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Bryophyte Cover % per Plot	BRYOPHCV	15	100 00	0 8880	0 835	0 218	0 243	0 01	3 00
Bryophyte Spp Richness per Plot	BRYOPHRP	15	100 00	2 2867	1 163	0 300	0 132	1 00	4 00
Terr Lichen Cover % per Plot	LCHTERCV	15	100 00	22 0867	25 800	6 610	0 300	0 04	65 25
Terr Lichen Spp Richness per Plot	LCHTERRP	15	100 00	3 2000	3 274	0 887	0 064	4 00	13 00
Epiph Lichen Cover % per Plot	LCHEPICV	15	100 00	0 3867	0 853	0 188	0 438	0 03	3 25
Epiph Lichen Spp Richness per Plot	LCHEPIRP	15	100 00	0 2000	1 821	0 470	0 978	3 00	8 00
Lichen Cover % per Plot	LCHALLCV	15	100 00	22 4553	25 412	6 561	0 282	0 33	65 25
Lichen Spp Richness per Plot	LCHALLRP	15	100 00	15 4000	2 913	0 875	0 044	12 00	21 00
Cover % per Plot of All Spp	TOTALCV	15	100 00	23 3433	25 183	6 488	0 278	1 21	65 39
Richness per Plot of All Spp	TOTALRP	15	100 00	17 0867	3 063	0 791	0 046	13 00	24 00

Athabasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/02/83 PAGE 41
Descriptive Statistics for Each Synthetic Variable
FILE A0582835 (CREATION DATE = 04/02/83) Sixteen Stand Tables of 1982 Bryoid Cover % Data (25m2)
SUBFILE 503

LABEL	VARIABLE	N	FREQ %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Bryophyte Cover % per Plot	BRYOPHCV	15	100.00	3.0673	1 873	0.508	0.181	1 00	6 00
Bryophyte Spp Richness per Plot	BRYOPHRP	15	100 00	1 1333	0 352	0 091	0 080	1 00	2.00
Terr Lichen Cover % per Plot	LCHTERCV	15	100 00	39 6753	30 485	7 871	0 197	4 43	97 51
Terr Lichen Spp Richness per Plot	LCHTERRP	15	100 00	8 8000	1 183	0 305	0 033	6 00	12.00
Epiph Lichen Cover % per Plot	LCHEPICV	15	100 00	0 1713	0 177	0 030	0 177	0 05	0 45
Epiph Lichen Spp Richness per Plot	LCHEPIRP	15	100 00	0.7333	0 458	0 118	0 614	0 00	0 00
Lichen Cover % per Plot	LCHALLCV	15	100 00	40 9486	30 494	7 873	0 187	4 52	97 55
Lichen Spp Richness per Plot	LCHALLRP	15	100 00	10.3333	1 447	0 374	0 020	10 00	31 00
Cover % per Plot of All Spp	TOTALCV	15	100 00	43.8540	30 173	7 790	0 182	5 53	98 55
Richness per Plot of All Spp	TOTALRP	15	100 00	18.6667	1 497	0 383	0 019	17 00	22.00

Athabasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/02/83 PAGE 42
Descriptive Statistics for Each Synthetic Variable
FILE A0582835 (CREATION DATE = 04/02/83) Sixteen Stand Tables of 1982 Bryoid Cover % Data (25m2)
SUBFILE 503

LABEL	VARIABLE	N	FREQ %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Bryophyte Cover % per Plot	BRYOPHCV	15	100 00	1 7973	4 084	1 087	0 581	0 01	15 11
Bryophyte Spp Richness per Plot	BRYOPHRP	15	100 00	2 0667	1 163	0 300	0 058	1 00	5 00
Terr Lichen Cover % per Plot	LCHTERCV	15	100 00	41 4333	28 176	7 534	0 182	0 26	86 97
Terr Lichen Spp Richness per Plot	LCHTERRP	15	100 00	8 8667	1 598	0 513	0 077	3 00	9 00
Epiph Lichen Cover % per Plot	LCHEPICV	15	100 00	0 1460	0 066	0 036	0 187	0 01	0 35
Epiph Lichen Spp Richness per Plot	LCHEPIRP	15	100 00	4 0000	1 852	0 515	0 112	1 00	8 00
Lichen Cover % per Plot	LCHALLCV	15	100 00	41 8713	29 181	7 535	0 181	0 38	88 08
Lichen Spp Richness per Plot	LCHALLRP	15	100 00	12 8667	3 483	0 838	0 058	4 00	14 00
Cover % per Plot of All Spp	TOTALCV	15	100 00	43 3586	27 902	7 204	0 166	3 38	86 36
Richness per Plot of All Spp	TOTALRP	15	100 00	14.3333	2 610	0 674	0 047	9 00	18 00

Athabasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/02/83 PAGE 43
Descriptive Statistics for Each Synthetic Variable
FILE A0582835 (CREATION DATE = 04/02/83) Sixteen Stand Tables of 1982 Bryoid Cover % Data (25m2)
SUBFILE 504

LABEL	VARIABLE	N	FREQ %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Bryophyte Cover % per Plot	BRYOPHCV	15	100 00	3 8040	4 127	1 066	0.286	0 11	15 10
Bryophyte Spp Richness per Plot	BRYOPHRP	15	100 00	2 1333	0 352	0 091	0 043	2 00	3 00
Terr Lichen Cover % per Plot	LCHTERCV	15	100 00	38 6400	22 595	5 850	0 148	0 18	78 31
Terr Lichen Spp Richness per Plot	LCHTERRP	15	100 00	10 7333	2 815	0 783	0 070	8 00	15 00
Epiph Lichen Cover % per Plot	LCHEPICV	15	100 00	0 1400	0 066	0 018	0 126	0 04	0 25
Epiph Lichen Spp Richness per Plot	LCHEPIRP	15	100 00	5 8000	0 737	0 190	0 032	7 00	10 00
Lichen Cover % per Plot	LCHALLCV	15	100 00	39 8200	22 858	5 901	0 147	0 43	78.39
Lichen Spp Richness per Plot	LCHALLRP	15	100 00	19 3333	3 590	0 595	0 038	15 00	24 00
Cover % per Plot of All Spp	TOTALCV	15	100 00	43 4238	24 843	6 414	0 148	1.44	88 46
Richness per Plot of All Spp	TOTALRP	15	100 00	21 4667	2 642	0 682	0 032	17 00	28 00

Athabasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/02/83 PAGE 44
Descriptive Statistics for Each Synthetic Variable
FILE A0582835 (CREATION DATE = 04/02/83) Sixteen Stand Tables of 1982 Bryoid Cover % Data (25m2)
SUBFILE 505

LABEL	VARIABLE	N	FREQ %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Bryophyte Cover % per Plot	BRYOPHCV	15	93.33	0 1467	0 351	0 086	0 438	0 0	1 03
Bryophyte Spp Richness per Plot	BRYOPHRP	15	93 33	2 2867	1 163	0 300	0 133	0 0	4 00
Terr Lichen Cover % per Plot	LCHTERCV	15	100 00	69 9373	15 464	4 004	0 063	35 54	85 54
Terr Lichen Spp Richness per Plot	LCHTERRP	15	100 00	11 8000	3 157	0 887	0 048	7 00	15 00
Epiph Lichen Cover % per Plot	LCHEPICV	15	100 00	0 2107	0 063	0 021	0 101	0 06	0 28
Epiph Lichen Spp Richness per Plot	LCHEPIRP	15	100 00	4 5867	0 465	0 120	0 015	3 00	5 00
Lichen Cover % per Plot	LCHALLCV	15	100 00	70 1498	15 883	4 005	0 058	35 72	85 72
Lichen Spp Richness per Plot	LCHALLRP	15	100 00	20 2867	2 604	0 021	0 021	15 00	23 00
Cover % per Plot of All Spp	TOTALCV	15	100 00	70 2586	15 883	4 100	0 058	35 85	85 72
Richness per Plot of All Spp	TOTALRP	15	100 00	32 8333	3 388	0 818	0 027	15 00	28 00

Athbasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/02/83 PAGE 46
Descriptive Statistics for Each Synthetic Variable
FILE ADS82826 (CREATION DATE = 04/02/83) Sixteen Stand Tables of 1982 Bryoid Cover % Data (25m2)
SUBFILE 507

LABEL	VARIABLE	N	FREQ %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Bryophyte Cover % per Plot	BRYOPHCV	15	100.00	0.7883	0.848	0.143	0.185	0.03	1.42
Bryophyte Spp. Richness per Plot	BRYOPHRP	15	100.00	3.3333	1.988	0.513	0.154	1.00	7.00
Terr. Lichen Cover % per Plot	LCHTERCV	15	100.00	55.1979	20.535	5.380	0.096	23.23	80.43
Terr. Lichen Spp. Richness per Plot	LCHTERRP	15	100.00	10.8667	1.345	0.347	0.033	8.00	12.00
Epiph. Lichen Cover % per Plot	LCHEPICV	13	100.00	0.6483	1.053	0.272	0.320	0.17	4.33
Epiph. Lichen Spp. Richness per Plot	LCHEPIRP	15	100.00	8.0867	0.458	0.118	0.015	7.00	9.00
Lichen Cover % per Plot	LCHALLCV	15	100.00	57.0473	20.536	5.302	0.093	24.30	80.59
Lichen Spp. Richness per Plot	LCHALLRP	15	100.00	18.7333	1.438	0.371	0.020	18.00	21.00
Cover % per Plot of All Spp.	TOTALCV	15	100.00	57.8126	20.533	5.326	0.092	24.50	80.95
Richness per Plot of All Spp.	TOTALRP	15	100.00	22.0867	2.865	0.740	0.034	18.00	28.00

Athbasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/02/83 PAGE 46
Descriptive Statistics for Each Synthetic Variable
FILE ADS82826 (CREATION DATE = 04/02/83) Sixteen Stand Tables of 1982 Bryoid Cover % Data (25m2)
SUBFILE 508

LABEL	VARIABLE	N	FREQ %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Bryophyte Cover % per Plot	BRYOPHCV	15	86.67	0.1293	0.246	0.083	0.488	0.0	1.00
Bryophyte Spp. Richness per Plot	BRYOPHRP	15	86.67	0.8333	0.458	0.118	0.127	0.0	2.00
Terr. Lichen Cover % per Plot	LCHTERCV	15	100.00	73.7183	11.840	2.978	0.040	52.46	91.55
Terr. Lichen Spp. Richness per Plot	LCHTERRP	15	100.00	13.4667	1.767	0.456	0.037	10.00	16.00
Epiph. Lichen Cover % per Plot	LCHEPICV	15	100.00	0.3307	0.386	0.100	0.301	0.06	1.34
Epiph. Lichen Spp. Richness per Plot	LCHEPIRP	15	100.00	7.8667	0.352	0.091	0.012	7.00	8.00
Lichen Cover % per Plot	LCHALLCV	15	100.00	74.0488	11.338	2.928	0.040	52.83	91.62
Lichen Spp. Richness per Plot	LCHALLRP	15	100.00	20.3333	1.952	0.504	0.025	17.00	24.00
Cover % per Plot of All Spp.	TOTALCV	15	100.00	74.1783	11.249	2.905	0.038	52.73	91.73
Richness per Plot of All Spp	TOTALRP	15	100.00	21.2867	1.981	0.511	0.024	18.00	25.00

Athbasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/02/83 PAGE 47
Descriptive Statistics for Each Synthetic Variable
FILE ADS82826 (CREATION DATE = 04/02/83) Sixteen Stand Tables of 1982 Bryoid Cover % Data (25m2)
SUBFILE 509

LABEL	VARIABLE	N	FREQ %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Bryophyte Cover % per Plot	BRYOPHCV	15	100.00	19.0833	24.880	6.387	0.334	0.02	88.10
Bryophyte Spp. Richness per Plot	BRYOPHRP	15	100.00	5.0000	1.309	0.338	0.066	2.00	7.00
Terr. Lichen Cover % per Plot	LCHTERCV	15	100.00	54.7413	28.071	7.248	0.132	3.03	84.16
Terr. Lichen Spp. Richness per Plot	LCHTERRP	15	100.00	8.4000	1.882	0.486	0.056	4.00	12.00
Epiph. Lichen Cover % per Plot	LCHEPICV	15	100.00	0.4887	0.588	0.152	0.305	0.06	2.34
Epiph. Lichen Spp. Richness per Plot	LCHEPIRP	15	100.00	4.4867	0.743	0.192	0.023	7.00	8.00
Lichen Cover % per Plot	LCHALLCV	15	100.00	55.2400	28.080	7.253	0.131	3.30	80.43
Lichen Spp. Richness per Plot	LCHALLRP	15	100.00	15.8867	1.885	0.436	0.035	13.00	18.00
Cover % per Plot of All Spp.	TOTALCV	15	100.00	74.3033	20.265	5.232	0.070	30.69	94.97
Richness per Plot of All Spp.	TOTALRP	15	100.00	21.8867	2.356	0.608	0.028	16.00	26.00

Athbasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/02/83 PAGE 48
Descriptive Statistics for Each Synthetic Variable
FILE ADS82826 (CREATION DATE = 04/02/83) Sixteen Stand Tables of 1982 Bryoid Cover % Data (25m2)
SUBFILE 510

LABEL	VARIABLE	N	FREQ %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Bryophyte Cover % per Plot	BRYOPHCV	15	100.00	2.3867	1.397	0.338	0.147	1.00	5.00
Bryophyte Spp. Richness per Plot	BRYOPHRP	15	100.00	2.8667	1.187	0.307	0.107	1.00	5.00
Terr. Lichen Cover % per Plot	LCHTERCV	15	100.00	75.7826	6.415	3.173	0.028	53.22	84.27
Terr. Lichen Spp. Richness per Plot	LCHTERRP	15	100.00	10.8667	1.633	0.495	0.046	7.00	15.00
Epiph. Lichen Cover % per Plot	LCHEPICV	15	100.00	0.5353	0.813	0.210	0.392	0.07	3.14
Epiph. Lichen Spp. Richness per Plot	LCHEPIRP	15	100.00	7.9333	0.258	0.067	0.008	7.00	8.00
Lichen Cover % per Plot	LCHALLCV	15	100.00	76.3178	7.817	3.044	0.027	59.36	84.62
Lichen Spp. Richness per Plot	LCHALLRP	15	100.00	18.8000	1.897	0.490	0.026	15.00	23.00
Cover % per Plot of All Spp.	TOTALCV	15	100.00	78.8026	7.670	1.857	0.025	59.46	85.72
Richness per Plot of All Spp.	TOTALRP	15	100.00	21.8867	2.127	0.549	0.025	19.00	25.00

Athabasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/02/83 PAGE 49
Descriptive Statistics for Each Synthetic Variable
FILE A0S82825 (CREATION DATE = 04/02/83) Sixteen Stand Tables of 1982 Bryoid Cover % Data (25m2)
SUBFILE S12

LABEL	VARIABLE	N	FREQ %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Bryophyte Cover % per Plot	BRYOPHCV	15	100.00	5.9113	5.461	1.410	0.239	0.21	20.10
Bryophyte Spp. Richness per Plot	BRYOPHRP	15	100.00	3.4667	0.915	0.236	0.066	2.00	5.00
Terr. Lichen Cover % per Plot	LCHTERCV	15	100.00	44.9466	24.930	6.437	0.144	12.32	85.23
Terr. Lichen Spp. Richness per Plot	LCHTERRP	15	100.00	9.4000	1.183	0.306	0.033	8.00	12.00
Epiph. Lichen Cover % per Plot	LCHEPICV	15	100.00	0.2413	0.269	0.069	0.286	0.07	1.06
Epiph. Lichen Spp. Richness per Plot	LCHEPIRP	15	100.00	3.5333	0.640	0.165	0.018	7.00	5.00
Lichen Cover % per Plot	LCHALLCV	15	100.00	44.8660	24.928	6.436	0.143	12.40	86.67
Lichen Spp. Richness per Plot	LCHALLRP	15	100.00	17.8333	1.560	0.403	0.023	15.00	21.00
Cover % per Plot of All Spp	TOTALCV	15	100.00	50.7973	26.566	6.860	0.135	13.42	89.32
Richness per Plot of All Spp.	TOTALRP	15	100.00	21.4000	2.063	0.533	0.026	18.00	25.00

Athabasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/02/83 PAGE 50
Descriptive Statistics for Each Synthetic Variable
FILE A0S82825 (CREATION DATE = 04/02/83) Sixteen Stand Tables of 1982 Bryoid Cover % Data (25m2)
SUBFILE S14

LABEL	VARIABLE	N	FREQ %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Bryophyte Cover % per Plot	BRYOPHCV	15	100.00	1.8507	1.573	0.509	0.281	0.10	8.02
Bryophyte Spp. Richness per Plot	BRYOPHRP	15	100.00	3.8000	1.454	0.375	0.104	1.00	8.00
Terr. Lichen Cover % per Plot	LCHTERCV	15	100.00	3.4680	2.243	0.579	0.167	0.18	8.22
Terr. Lichen Spp. Richness per Plot	LCHTERRP	15	100.00	9.8000	2.026	0.524	0.055	9.00	14.00
Epiph. Lichen Cover % per Plot	LCHEPICV	15	100.00	0.2893	0.128	0.033	0.123	0.08	0.54
Epiph. Lichen Spp. Richness per Plot	LCHEPIRP	15	100.00	6.8333	0.258	0.067	0.007	6.00	8.00
Lichen Cover % per Plot	LCHALLCV	15	100.00	3.7353	2.222	0.574	0.154	0.45	8.58
Lichen Spp. Richness per Plot	LCHALLRP	15	100.00	16.8333	1.885	0.615	0.038	15.00	23.00
Cover % per Plot of All Spp	TOTALCV	15	100.00	5.6880	3.134	0.808	0.142	1.48	12.78
Richness per Plot of All Spp.	TOTALRP	15	100.00	22.1333	2.446	0.631	0.029	18.00	27.00

Athabasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/02/83 PAGE 51
Descriptive Statistics for Each Synthetic Variable
FILE A0S82825 (CREATION DATE = 04/02/83) Sixteen Stand Tables of 1982 Bryoid Cover % Data (25m2)
SUBFILE S15

LABEL	VARIABLE	N	FREQ %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Bryophyte Cover % per Plot	BRYOPHCV	15	100.00	5.7440	5.710	1.474	0.257	0.22	24.10
Bryophyte Spp. Richness per Plot	BRYOPHRP	15	100.00	5.2667	1.223	0.316	0.090	4.00	7.00
Terr. Lichen Cover % per Plot	LCHTERCV	15	100.00	10.3740	10.286	2.656	0.255	0.43	37.34
Terr. Lichen Spp. Richness per Plot	LCHTERRP	15	100.00	9.0000	1.964	0.507	0.055	5.00	13.00
Epiph. Lichen Cover % per Plot	LCHEPICV	15	100.00	0.4133	0.267	0.074	0.179	0.18	1.14
Epiph. Lichen Spp. Richness per Plot	LCHEPIRP	15	100.00	6.8333	1.845	0.477	0.073	1.00	6.00
Lichen Cover % per Plot	LCHALLCV	15	100.00	10.7813	10.382	2.681	0.248	0.77	38.48
Lichen Spp. Richness per Plot	LCHALLRP	15	100.00	15.8333	2.732	0.705	0.045	10.00	19.00
Cover % per Plot of All Spp	TOTALCV	15	100.00	16.5393	10.383	2.683	0.162	5.71	44.78
Richness per Plot of All Spp.	TOTALRP	15	100.00	30.6000	3.188	0.823	0.040	14.00	36.00

Athabasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/02/83 PAGE 52
Descriptive Statistics for Each Synthetic Variable
FILE A0S82825 (CREATION DATE = 04/02/83) Sixteen Stand Tables of 1982 Bryoid Cover % Data (25m2)
SUBFILE S16

LABEL	VARIABLE	N	FREQ %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Bryophyte Cover % per Plot	BRYOPHCV	15	100.00	47.6306	36.823	9.674	0.145	8.33	80.13
Bryophyte Spp. Richness per Plot	BRYOPHRP	15	100.00	5.6000	1.404	0.383	0.085	4.00	8.00
Terr. Lichen Cover % per Plot	LCHTERCV	15	100.00	3.8660	3.309	0.886	0.206	0.18	8.22
Terr. Lichen Spp. Richness per Plot	LCHTERRP	15	100.00	8.3333	1.877	0.486	0.056	5.00	11.00
Epiph. Lichen Cover % per Plot	LCHEPICV	15	93.33	0.1600	0.112	0.029	0.181	0.0	0.44
Epiph. Lichen Spp. Richness per Plot	LCHEPIRP	15	93.33	6.8000	1.082	0.486	0.074	0.0	8.00
Lichen Cover % per Plot	LCHALLCV	15	100.00	3.0660	3.348	0.881	0.189	0.32	8.22
Lichen Spp. Richness per Plot	LCHALLRP	15	100.00	14.8333	2.374	0.613	0.041	10.00	18.00
Cover % per Plot of All Spp	TOTALCV	15	100.00	50.5966	36.323	6.794	0.134	9.64	83.28
Richness per Plot of All Spp	TOTALRP	15	100.00	30.5333	3.188	0.816	0.040	14.00	38.00

7.2 ANNOTATED LIST OF COLOR SLIDES

Only slides of the four new stands are included and they have been selected to illustrate the same features pointed out in the First Report.

Slides for 1983 Report

Slide Number	Permanent Plot Number	Annotation
1	New-1	Air oblique of permanent plot. White corner posts visible in reference stand.
2	New-1	Ground lateral of reference stand with widely spaced *Pinus banksiana*, extensive *Arctostaphylos uva-ursi* mats, and developing lichen carpet.
3	New-1	Detail of a large *Arctostaphylos uva-ursi* mat in which a young *Picea glauca* tree is growing, along with scattered plants of *Vaccinium myrtilloides*, *Anemone patens* and *Oryzopsis pungens*. Note charred wood residues.
4	New-1	Detail of terrestrial bryophytes and lichens with scattered *Cladina mitis*, *Cladonia chlorophaea* and *Polytrichum piliferum* most abundant.
5	New-2	Air oblique of permanent plot. Survey staff with white tape are visible in upper part of picture.
6	New-2	Ground lateral of reference stand with numerous stunted *Pinus banksiana* trees, well-developed lichen carpet, and moderately abundant epiphytic lichens.
7	New-2	Detail of *Vaccinium vitis-idaea* plants in thick lichen carpet dominated by *Cladina mitis*.

Annotated List of Color Sli Continued

Slide Number	Permanent Plot Number	Annotation
8	New-2	Detail of terrestrial lichens with *Cladina mitis* forming an almost continuous carpet, *Cladina stellaris* colony in center, and some *Cetraria nivalis* in lower right (paler yellow cf. *C. mitis*).
9	New-3	Air oblique of permanent plot. White corner posts visible in reference stand.
10	New-3	Ground lateral of reference stand with young *Pinus banksiana* trees and extensive *Arctostaphylos uva-ursi* mats.
11	New-3	Detail of ground surface with scattered *Maianthemum canadense* leaves in a matrix of lichens and pine detritus.
12	New-3	Close-up of terrestrial bryophytes and lichens with *Polytrichum piliferum* abundant, *Cetraria ericetorum* in center (tan color), and several *Cladonia* species.
13	New-4	Air oblique of permanent plot. White corner posts visible in reference stand.
14	New-4	Ground lateral of reference stand with clumps of old and young *Pinus banksiana* trees and patchy *Arctostaphylos uva-ursi* on the lichen-dominated forest floor.
15	New-4	Detail of understory plants, with *Vaccinium myrtilloides* at right and *V. vitis-idaea* at left, in a loosely knit lichen carpet composed mainly of *Cladina mitis* with some *Cladonia cornuta*.

Annotated List of Color Slides Concluded

Slide Number	Permanent Plot Number	Annoation
16	New-3	Reference stand being established in Permanent Plot No. New-3 on 5 August 1982.
17	New-4	Wedge being sawn from a fire-scarred tree to determine dates of fires and stand origin date.
18	1	Corner posts re-located in reference stand no. 1 burned over in 1981. Young trees were killed but their tops were not burned.
19	11	Corner posts re-located in reference stand no. 11 burned over in 1981. Mature trees were killed by a combined ground and patchy crown fire. Note re-sprouting *Alnus crispa* upper left and *Rosa acicularis* lower left.
20	11	Close-up of burned over forest floor in reference stand no. 11 with seedlings of *Pinus banksiana* and other fire-adapted plants, including the annuals *Geranium bicknellii* and a species being grown in the University of Alberta Greenhouse for positive identification.

7.3 COLOR SLIDES

The 20 color slides supplied with the original set of reports are inserted in one clear plastic page at the end of the report. These slides may be viewed at the Research Management Division, Alberta Department of the Environment.

POOR

QUALITY

ORIGINAL